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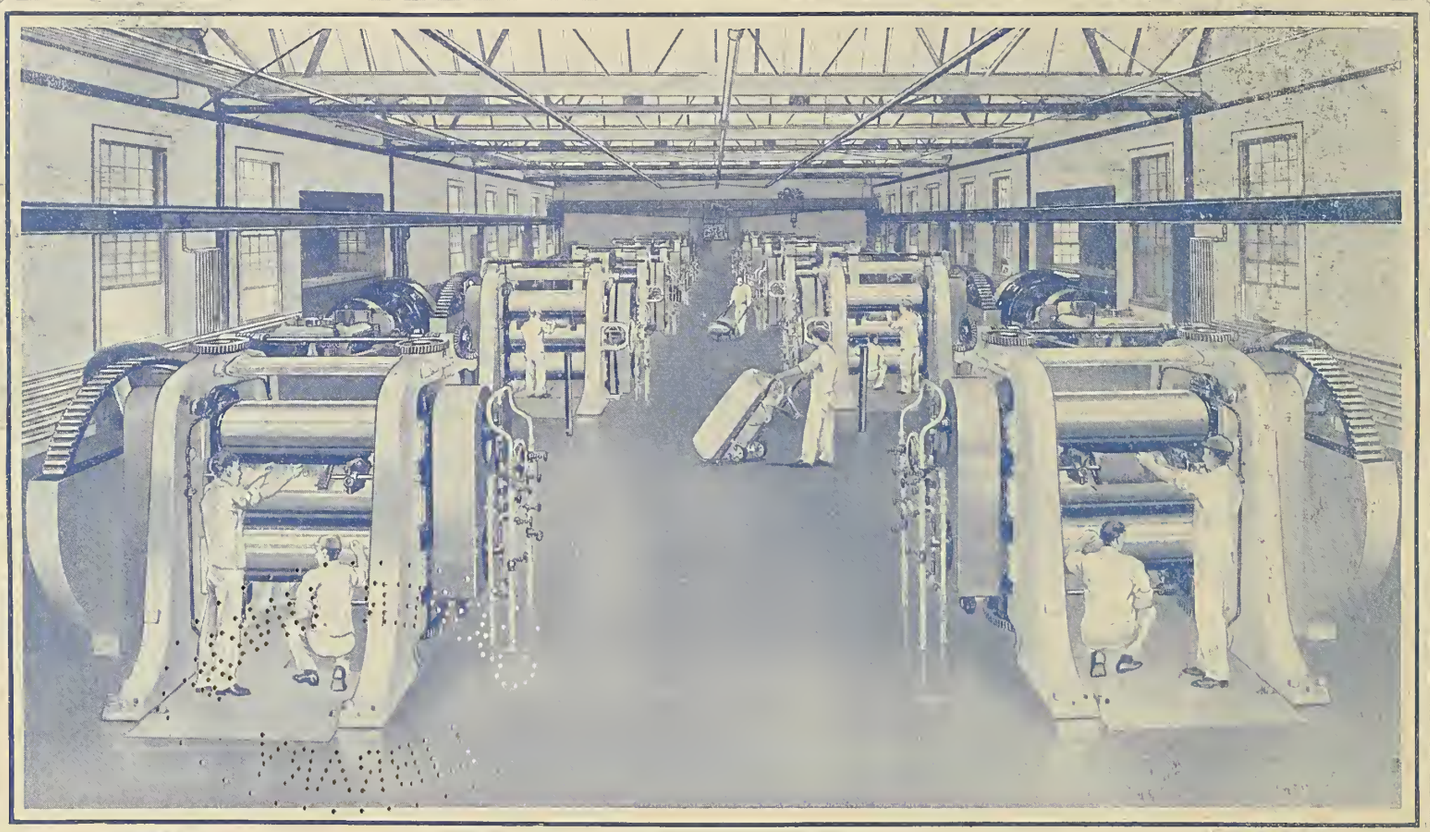
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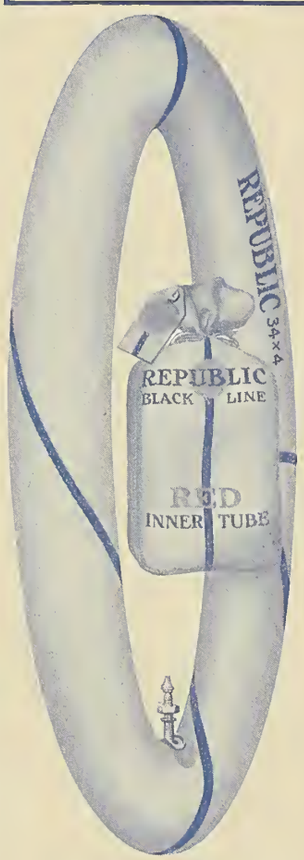
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The Baltusrol Country Club

spring a stream of negligee-clothed men and girls carrying the implements of their particular game may be seen trooping over the green. This interest has started that particular type of healthy individual to seek country life, and this feature often determines the choice of residence of some individuals. Let us look into some of the localities that provide especial facilities for the indulgence of a taste for sport.

Along the rolling country of northern New Jersey, about fifty minutes from New York, is the Short Hills section—a district



The Canoe Brook Club Short Hills

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On the Golf Links, Great Neck Estates, L. I.

skating, and interesting contests between local hockey teams take place upon the small lakes adjoining. Besides these two clubhouses, Short Hills has a Casino to look after those who may not be actively interested in outdoor sport.

LONG ISLAND substitutes hill and mountain level areas culminating in the steep bluffs of the Sound shore. The



Thecove and bathing beach, Great Neck Estates.

devotee to athletic sports finds an additional delight in the bathing and water sports. This is especially true on the Great Neck district. The estates of Great Neck front on the curving shore of Little Neck bay where there are ideal facilities for still water bathing. And sailing too, there are few more desirable spots for it with the interesting coves, many harbors to visit, and neighboring yacht clubs. But this does not preclude the land sports for ashore there are links and tennis courts to rival those of the hill region.

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Training the Dog—V

EVERY dog that is worth having—and I say this advisedly — should be taught to "heel." This term may not be familiar to some, though its meaning is really not obscure. It signifies merely that when the order "heel" is given the dog shall come close to its master's or mistress's heels and remain there until given some such releasing word as "on," "hie on" or "get away."

The value of such an accomplishment on the dog's part is obvious. It is designed primarily as a handy substitute for leash or chain when you are out walking and for any reason wish your dog to remain close to you for a long or short period. Everyone who has had experience with the average canine's proclivity for "running wild" over front lawns, in and out of yards abutting on the street, etc., knows what complications often arise therefrom. Entirely aside from your own convenience in the matter, it is no more than fair to the dog to keep him under proper control when passing along a thickly-settled residence street, for example, and, admittedly, other people whose rights are infringed upon by the inadequately trained dog are entitled to some consideration. There is real value, also, in "heel" when it comes to avoiding wayside fights between your dog and the pugnacious individuals of his kind which he is sure to meet from time to time when out with you. The average bully of dogdom will think twice before attacking a dog following within a few inches of his master's heels. And if worse comes to worse, you are close enough to the arena to render prompt assistance if need be.

"Heel" is not a difficult lesson to teach, especially when the pupil's mind has been at least rudimentarily trained by the commands "come" and "lie down." As for all lessons, take the dog away from anything tending to distract him from the work in hand. Snap a chain to his collar, and provide yourself with a light switch two or three feet long. Take the chain in the left hand, holding it behind you and short enough so that the dog will be obliged to stay within a few inches of your feet. Now, with the switch in your right hand, walk slowly away, the dog, of course, necessarily following. Keep repeating the word "heel" in a tone similar to that used in other commands. The dog may either hang back on the chain or try to push forward and past you. In the first event, merely tighten your grip on the chain and walk on; in the second, tap him very lightly about the head with the switch, thus inducing him to fall back to his proper place. If he attempts to break away to one side or the other, check him with the switch and chain, chiefly the latter.

A short session of this sort of thing will demonstrate to the average dog that the wisest and most comfortable thing for him to do is to stay as close to your heels as possible. When this point is reached,

you may begin to slacken up on the chain a little, at the same time watching closely for any move away from position and checking it promptly should it occur. The releasing word ("on" is as good as any) should be given only when the lesson is over and you unfasten the chain from the dog's collar. It will probably be quickly learned and obeyed with alacrity, especially if accompanied by a wave of the hand and a sort of "all right, old boy—it's all over" manner.

When you think that the dog fully understands "heel" in so far as it means following close behind you, and when he obeys it properly while on the short chain, commence to teach him that the order signifies also *coming to* the required position from a distance . Obviously, the way to make this point plain to the pupil is to use a longer chain or cord, allowing him to move about and away from you, then ordering "heel" and if need be drawing him into position with the cord. Probably one or two lessons will be sufficient for this last step; if so, dispense with the cord and drill the dog thoroughly without it.

This, then, is the last of the three main accomplishments in the elementary schooling of the well-mannered dog; the other two—"come" and "lie down"—have been considered in former articles of this series. Frequent rehearsal of all three has driven their meaning home beyond peradventure of doubt. If you have been painstaking and thorough in the work, perfecting your pupil in each lesson before taking up a new one, always insistent upon strict obedience, but never losing your temper in striving to secure it, and allowing no one else to meddle in the teaching, you should now have a dog that it is a satisfaction to own. In the close companionship which the course of teaching has brought about, he has learned to look upon you more or less as an idol, a superior being at once to worship and respect. He has learned that your word is law, and his brain has been developed along definite lines of usefulness. The foundation has been laid; the "three R's," in a manner of speaking, are an accomplished fact, so in the next instalment we will take up a more advanced course.



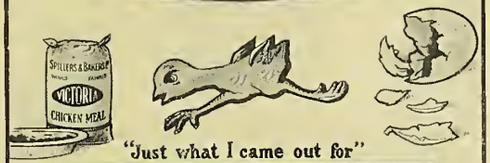
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(*Continued on page 66*)

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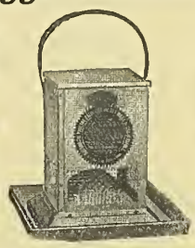
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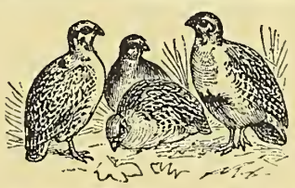
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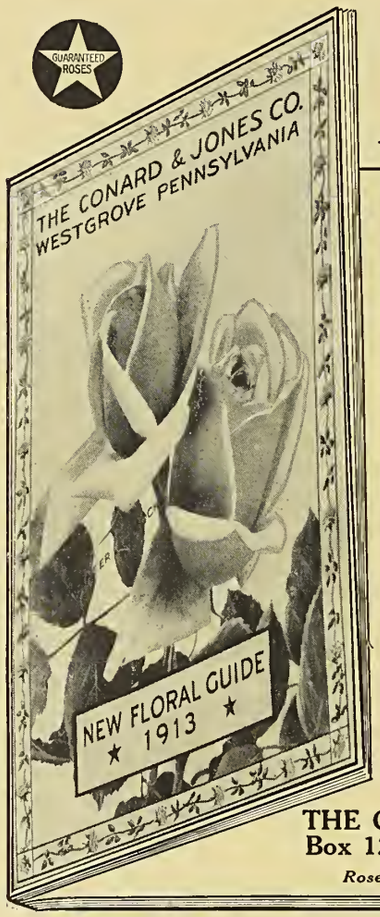
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IF there is one thing more than another that makes a publisher feel good all over it is to have someone he doesn't know send him a letter of intelligent praise—such as the following:

DEAR SIRS:

I wish to tell you that I consider TRAVEL one of the very finest publications in the world. As a teacher I have traveled in my native Europe and can appreciate your beautiful illustrations and well-written articles. I should enjoy, if you will, such articles like the one on Clovelly, or such places like San Gimignano, Carcassonne, Cintra, Ronda, etc. I detest ——'s [guide book], but just revel in description of such towns,

When I travel, I have no goal; I just keep on the move. The next trip will include some of the places you have described in TRAVEL.

I also want to say that some of your title pages, the covers, are very fine, especially the one of the May number.

With best wishes for your continued success, I am,

READER.

▲

We are very sorry not to be able to give a satisfactory answer to the following letter, which came to us just a few days ago:

I have just finished reading the most delightful book published by you, "The Girl with the Rosewood Crutches." I will thank you very much if you will advise me if there are any other books by this same author—and their title; also the price of the book mentioned. Thank you for an immediate reply. Mrs. C. E. D.

Our contract with the author especially provides that we are not to reveal the identity, and we cannot give the names of any other books by this author without violating our agreement. This is doubly unfortunate, because some of this author's other books are well worth reading, although we feel that the writer of the above letter has read the best in "The Girl with the Rosewood Crutches."

▲

Lewis Gaston Leary, the well-known traveler and author, whose recent "Andorra, the Hidden Republic," has aroused such favorable comment both in America and Europe, is discouraging copy for the literary press-agent; for he admits with sorrow that he has never had any thrilling experiences or hairbreadth escapes. During a hundred thousand miles of journeying in thirty countries, he has never been in a railway accident, or lost a day through illness, and he has yet to witness his first storm at sea.

Mr. Leary has lived in the toughest slums of European capitals, traveled through the troubled Balkans, and ridden through the untraveled districts of northern Syria, and his only really exciting personal experience was being thrown over a cliff by a runaway mule. Once he drove unsuspectingly through a district which was being terrorized by a marauding robber tribe. His host was stabbed just after Mr. Leary left him, and another man was murdered within stone's throw of the trail; but his own journey was deadly dull and uninteresting. In fact, Mr. Leary confesses with regret that, though he once lived in a town where there was an assassination every night for six weeks, he himself has never seen a serious strect brawl.

Mr. Leary contends that if it ever did come to shooting, the other fellow would doubtless know more about it than he would; so he has never owned a revolver, but contents himself with preparing for possible contingencies by carry a heavy riding-crop or stout cane.

▲

The editors of a magazine generally are brought into more or less personal touch with their contributors, but occasionally they never see them from one year's end to another. (If that is an advantage, it works both ways.) A contributor to *House and Garden* who had for some years transacted all business by letter was asked for his picture for use in connection with some work in connection with publicity. The request was sent off to Mr. A. Henry White—or whatever the name was—and presently the photograph arrived. "A. Henry White" was a very comely young woman!

▲

House and Garden readers remember John Anthony. He it was who went up to Vermont, bought a farm and began the growing of apples in a business-like way. He wrote his adventures in orcharding a year ago, after the first strenuous year of farm life. He was enthusiastic then, but you should hear him now! One rainy day a few weeks ago we found him sitting on the Office Lounge, the water dripping from his wet coat onto the tiles. He had the happy smile of a schoolboy and his enthusiasm was not a bit dampened by the melancholy weather. His first word was about his orchard in the country and the new adventures he has had there. It has been another successful year of joyful work, hard but satisfying. Every moment he has been learning something new, and he is going to tell it in *House and Garden*. And it is well worth hearing, for even if you are not particularly interested in orchards or the country you like to hear of red-blooded life. John Anthony claims that he has only now discovered the real way to live. His letter notifying us that he is sending the account says: "John Anthony has spoken—to the tune of about 3,000 words. His speech now awaits family criticism and the decision as to illustrations. When his utterance has been torn asunder by the family critics and furbished up again, it will be forwarded to you.

"My own opinion never yet agreed with that of an editor, so I expect you to like this better than last year, because I don't think it is as good. John has got lots more to say, only he hasn't yet found the gift of gab to say it. But here's hoping!"

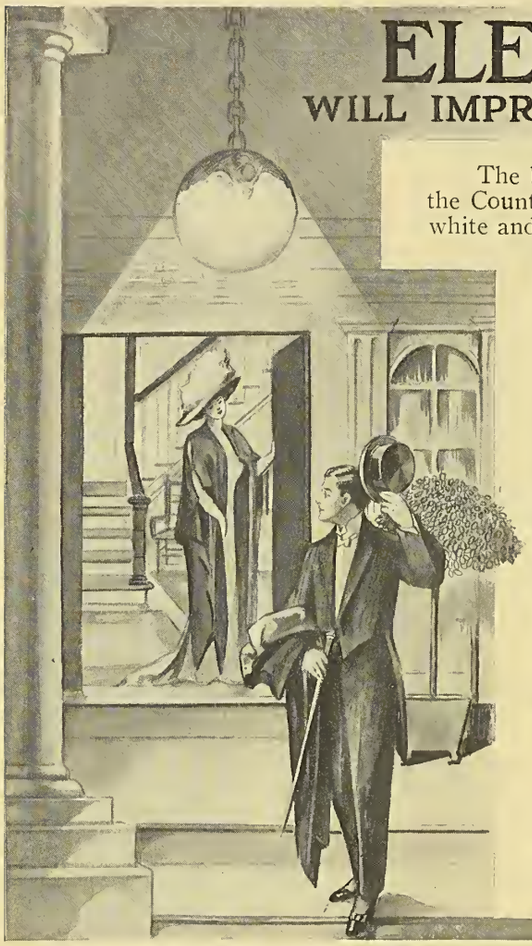
Now, there are not many men who would care to call John a liar. We merely question his judgment in regard to his literary efforts. We think he has the gift of gab. When you read his account you will agree with us, we feel sure. We know that you will enjoy his story as much as we did the great, juicy, red apple he sent us. Both have the same crisp, delicious flavor.

▲

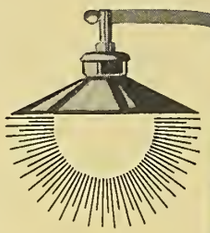
Some time ago we made a great mistake. We admit it now. We thought that the timely information in *House and Garden* was of chief interest about the time of issuance of the magazine. Therefore, we discontinued printing an index. When the next half year came round, we were nearly inundated by the flood of letters demanding it. That was one compensation. We learned how much people cared for past issues. There were requests for all sorts of past articles; some said that they had been deprived of their most valuable encyclopedia; one man wrote that *House and Garden* ranked next to the Bible in his estimation, and that he hoped nothing would make us discontinue the directory that rendered it constantly available. Well, we reformed, and rushed an index through for volume XXI. We have now completed that for volume XXII, which is from June through December, 1912. Those we disappointed before please take notice. We have atoned for our crime by being forced to write thousands of letters directing people to articles they wished to re-read. Every one may have his index now, however.

▲

"The Green Overcoat," that deliciously whimsical detective story by Hilaire Belloc, with illustrations by Gilbert R. Chesterton, has gone into a second edition.



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NUMBER 1



Some details completing the house add an active interest and homelikeness to it. The casement windows, the French doors, the over-arched lattice, the brick-paved terrace, all these are among the desirables as adding the final note to the country house. This is the terrace on the house of Mr. Thomas H. Kerr, White Plains, New York. Albro & Lindeburg, architects

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Although there is little regularity in the size of the windows in this house, yet their distribution and arrangement are such as to result in a pleasing sense of balance. The shutters of the second-story room on the right make the whole appear as wide as the triple window below

That Window Problem

THE TYPES OF WINDOWS—THE QUESTION OF DESIGN AND UTILITY BOTH INSIDE AND OUTSIDE—THE PRACTICAL CASEMENT AND ITS ADAPTABILITY

BY DRAPER WILLIAMSON

Photographs by the Author and Others

THERE seem to be two classes of individuals among the house-builders, and their characteristics are differentiated by their views on windows. The extremes are represented this way. One seeks to build a glass house, greedy of sunlight, and the other, hoarding privacy, lives in an atmosphere of shadow that is just made apparent by a few slits in the wall. Somewhere between lies the golden mean. So let's look into this window business a bit to find wherein each can help us with our particular problem. Three things one must ever keep in mind:

1. The windows must give proper light and air. 2. The windows must suit the room. 3. The windows must suit the house. These are essential.

Now, it is often a difficult matter to reconcile these three things, but it must be done, else your house design will be a failure. Take the right-hand house at the top of page 13, for instance; notice what a hideous hodge-podge we have of miscellaneous bays, casements, dormers and so on. No doubt these fit well enough into the interior scheme, but the exterior is utterly hopeless. And then compare the left-hand house, in the same picture; note the symmetrical, well-spaced windows; see how perfectly they are proportioned to the design of the building. Yet, I'll venture they fit



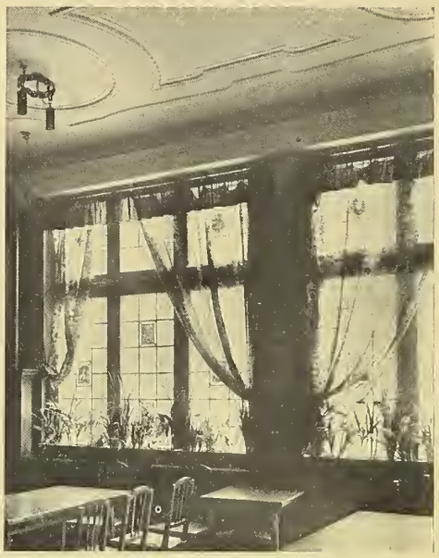
In modern leaded casements keep up the spirit of the old work



This English house pleasingly combines casements and mullioned bays

the interior arrangement no less perfectly on that account.

And now let us consider the different sorts of windows. Suppose, for a moment, that it is a Colonial house we want. Then most of the windows should be simple, small-paned affairs, with white or green shutters and marble or brick heads. Sometimes one finds twenty-four panes to the window; sometimes eighteen; never less than twelve. As the central feature of the second story the Colonial builders often used a Palladian window, such as is shown in the left-hand picture at the bottom of this page; named for Palladio, an early Italian architect, who first designed it. Wonderful delicacy and refinement of detail always marked the real Palladian window; its modern imitation is often crudely clumsy.



Clustered windows give pleasanter interior lighting effects than do isolated ones



Small panes in the bedroom windows admit of large, light-giving frames

But, above all, one must keep the Colonial house regular, symmetrical and free from picturesque "stunts." In the lower left corner of page 13 is the actual Eighteenth Century House; the upper photograph at the opposite corner of the same page is the Twentieth Century imitation. Now, the modern affair would be as gracefully pleasing as the older one, if only that fungus-like Elizabethan bay-window were scraped off. In itself, no doubt, the bay is well enough; it might even pass, after a fashion, if it were set centrally above the porch; but in its present happy-go-lucky anchorage it merely succeeds in ruining the whole design.



Triple-hung windows, sliding up into recesses, allow shutters and draperies

But if one would have some rambling, picturesque type of house, one doesn't need to keep so rigidly symmetrical. The half-timbered houses of England have such delightful little clusters of tiny-paned casements and such splendidly romantic ranges of tall-transomed, mullioned bays! And these clusters of windows give such sunny, delightful interiors, too—many times more pleasing than any arrangement of detached, single windows. But these many-parted, small-scale casements seem to need the companionship of half-timber work, with its broken-up, checkered surfaces; they rarely seem entirely satisfactory when we set them in another sort of house.

The old English window panes were always leaded in diamond pattern; with perhaps some crest or escutcheon, of colored glass, worked in the upper transoms. Of course, these old-time glaziers were forced to use small panes, for nothing larger could be made; but nowadays we can have what size panes we will. But while the single large pane has some undoubted practical advantages, it has serious esthetic disadvantages—sentimental disadvantages, too, let us say. For the single large pane coldly suggests the mart, the palace, the hotel; but does it ever suggest the home? Perhaps it is because we like to see some bit of screen between the home and the world, some subtle suggestion of privacy.

And thus it is that the modern architects still study schemes for small-paned windows, departing from the letter of the old diamond-lighted glass, but keeping its spirit, nevertheless. One finds squares, geometrical patterns and conventional designs in lead; sometimes one sees wood muntins; and, lately, casement sash of steel or bronze are being used.

"I'll just tell the carpenter to put a couple of dormers in the roof; he'll know what proportion to make them," said a certain cocksure property owner to me the other day. And the result? Well, the carpenter did not know how to proportion the windows; they are bare and staring; but a larger fault lies in the huge, overpowering dormers. These elephantine affairs are bad failures.



Colonial builders often used a Palladian window as the feature of the second story



A typical Colonial window of 1770, with small panes and a "Jack-arch" head



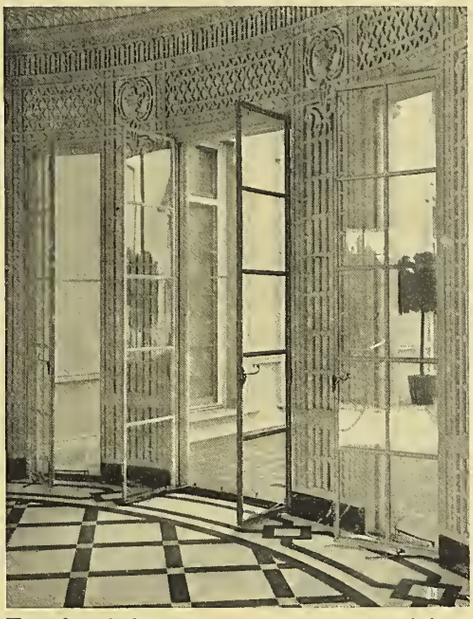
The right-hand house is a meaningless hodge-podge of bays, casements and dormers; the other has its windows carefully spaced and proportioned



A modern Colonial house, very pleasing in detail and with good gable-topped dormers on the main roof, but spoiled by the unsymmetrical setting of the bay

And there is a wonderful variety of dormers, too—enough for every possible sort of house. Dainty gable-topped Colonial dormers, with their round-headed or square-headed sash and small-paned windows; or Dutch-Colonial dormers, with long, slanting roofs. Again, we have the low, broad dormer of the attractive house at the top of this page. Be sure that the dormer you want will harmonize with the house you want. The Dutch-Colonial dormer, for example, needs a large, high-pitched roof; for if the slant be too flat, this sort of dormer looks horribly awkward. As a general rule, one must use some other dormer, if the main roof angle be less than forty-five degrees.

Sometimes one wants a window that one can use as a doorway, leading to a porch, a balcony or a terrace. The "French window" is the most usual sort—a pair of long casements, opening like double doors. If these casements have the shelter of a porch roof they may open in; otherwise they should open out, for it is almost impossible to make an in-opening casement tight against a direct driving rainstorm. And if one wants draped curtains, the in-opening sash are most awkward things, always getting hopelessly tangled up with the draperies. Out-opening sash are better, but one can't have shutters with them. So, if you want shutters and draperies on your terrace windows, you must use the scheme shown in the center of page 12—triple-hung windows, we call these; the three sash slide up into an overhead pocket, leaving ample height beneath for one to walk out. These triple-hung windows are not any new thing, either; we find them in century-old houses quite often. Occasionally the lowest sash is omitted and replaced with two little doors—"jib doors," carpenters call them—about two feet high. These jib doors do away with the risk of kicked-out panes, and have some other slight advantages, too.



French windows opening in, prevent injury from suddenly arising storms; they are also protected from moisture changes

In old-time houses one often finds quaint quadrant casements in the gable, on either side of the chimney. Besides being most attractive, these fit into the triangular gable space remarkably well. Occasionally where there is no central chimney the gable window is a half circle—"D-windows," in carpenters' language.

Stairway windows are often most difficult things to decide on. Usually, however, the Colonial builders would put a Palladian window here; it not only gave character to the exterior of the house, but made a most delightful effect as one looked up the stairway. The photograph at the beginning of this article shows another stair window scheme.

Shuttered windows are largely confined to Colonial work; for, of course, one cannot well have shutters on group windows or casements. Interior blinds have almost totally disappeared; the more convenient and less costly shade roller has taken their place. But outside shutters still stay, not only because they are convenient but because they are often very necessary to the design. Take the lowest picture at the right side of page 13: the shutters give a most needful note of color to the otherwise

(*Continued on page* 65)



An early Eighteenth Century house. The dormers are well in scale



Quadrant-shaped windows fit in the gable remarkably well

The Kind of a Roof for Your House

THE VARIOUS MATERIALS ADAPTABLE TO COUNTRY HOUSES—THEIR RELATIVE ADVANTAGES, COSTS, ENDURANCE, AND FIREPROOFING QUALITIES—IMPORTANT THINGS TO DISCUSS BEFORE THE HOUSE IS COMPLETED

BY FRANK CHOUTEAU BROWN

Photographs by Julian Bulkley, Mary H. Northend and Others

TO paraphrase a well known saying, it may with equal truth be said that a house is no tighter than its weakest part—and generally that weakest part is the roof. But there are other considerations besides mere practical or structural fitness that must be taken into account in selecting roofing materials for a dwelling, as to-day the question of appearance is being given more and more weight in deciding upon questions of house building, resulting from an esthetic advance in standards of taste for which the popular magazines, particularly those dealing with dwelling construction in an untechnical fashion, have had much to do.

The problem of roofing, then, consists first in making the roof waterproof or tight; second, in making it attractive; third, in the question of cost, and fourth—this a new point of view that is fortunately spreading with great rapidity,—comes the question as to the fire-protective qualities of the material.



If the slates are graded toward the ridge pole, a more pleasing effect is produced. Notice here also the varying uses of metal casements. Charles A. Platt, architect

In dwelling construction, of course, the flat roof is not an important part of the problem. Flat roofs often occur over piazzas, make the floors of sleeping porches, or occupy portions of the main roof known as "decks." Decks generally occur in designing a large house, when it is desirable to keep ridge or roof line low and increase the length at the same time that the height of a building is decreased. But the problem of the flat roof so little concerns the dwelling that it may well be set to one side.



Shingles are sometimes laid in double thickness every few courses to keep the house in scale. This place shows a good use of horizontal lines across a house. Albro & Lindeburg, architects

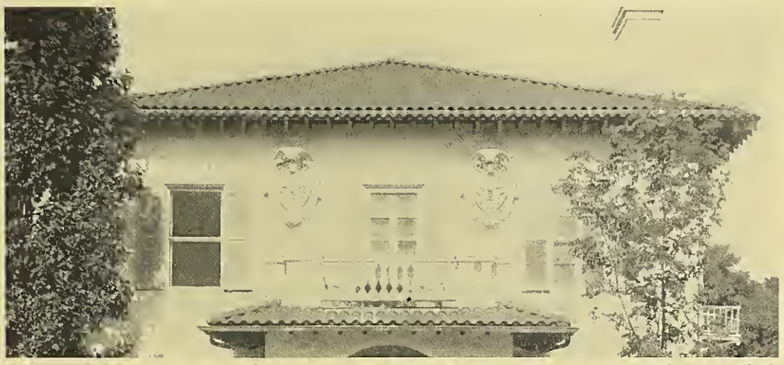
Roofing materials for a pitched roof, selected for cost, run about in the following order: First and cheapest, shingles; next in price, shingles dipped in preservative stain; third, slate of the cheaper quality; fourth, some of the patent roofs of various compositions; fifth come some varieties of roofing tile and the better qualities and the more expensive methods of laying slate; last, the most expensive types of tile roofing. This list might be further expanded by including those metals, in the form of tin, zinc, copper and lead, that are occasionally used on sloping roofs to obtain a particular effect and serve an unusual purpose; but as a rule these materials, except in the case of metal imitating the form of tiles, are generally used upon flat roofs.

First, as to the shingle roof: in those localities where shingles of good quality can be obtained for between $3.50 and $4.50 a thousand there can be no question but that this makes a satisfactory material for the ordinary dwelling. It is generally tighter than most slate or tile roofing, because the very moisture that creeps into the roof crevices and occasions trouble, causes the individual shingles to expand and so close up the smaller crevices through which the moisture might run or blow. Shingles are also, in the main, attractive in appearance. If put on without applied color pigment of any kind, they eventually become very dark and black in color, but for several years previous (in part depending upon the location of the house near the seashore or otherwise) they continue to develop varying shades of attractive weathered gray.

The life of the shingled roof varies from ten to twenty years, depending upon the steepness of its pitch and its location and exposure to weather or the points of the compass. A flat pitched roof will rot out sooner than a steep pitched roof; shingles laid upon a roof overhung by trees and much in shadow will not last nearly as long as when the house is open to currents of air and the drying rays of the sun. The shingles of a less perfect grade are, of course, shorter-lived than those freer from imperfections; and as the cost and labor of laying is the same in both cases, it is generally real economy to use only the best quality of seasoned cedar shingles on house roofs, particularly if the pitch is flatter than ninety degrees.

Of shingles to be found in stock, cedar—white or red—is the

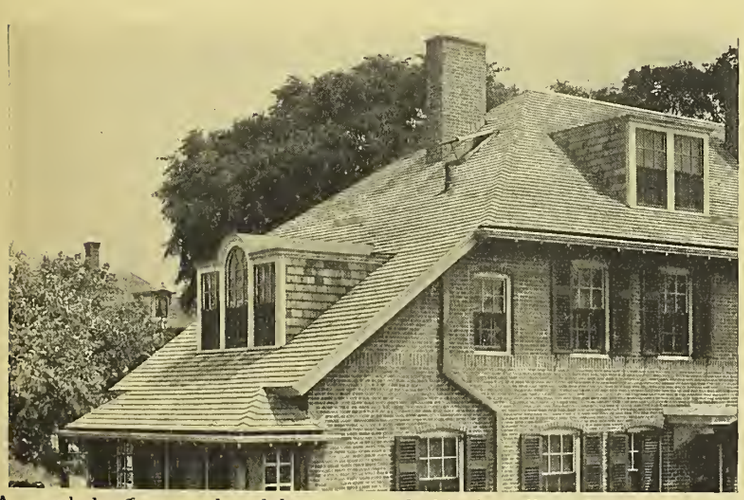
generally favored material. There are other shingles, to be sure: cypress and redwood, for instance. The latter, particularly, is cheaper and easier to obtain in the Western than the Eastern market. In northern latitudes the redwood shingles have sometimes not been satisfactory from the fact that they come in such large widths that, when filled with moisture and frozen by a sudden change in the weather, they are apt to split along the grain of the wood under the action of the slight pressure exerted by the upcurving uneven edges of the shingles beneath. This occasionally opens up crevices through which the next rainstorm finds an opening into the house below. Cypress or cedar shingles should both be laid up about the same distance to the weather, although the commercial shingle is growing thinner and shorter with each passing season and now barely covers eighty-five surface feet when it formerly covered one hundred. The cypress shingle comes in larger sizes and can be laid up in larger widths. Besides, it has obtained the reputation of extreme durability. The ordinary exposure of the cedar shingle is 4½ inches when on the roof, and not exceeding 5 inches when on the wall, and this gives the roof the appearance of being lined across with narrow strips that sometimes succeed in making the material too small and characterless on a large and boldly designed dwelling. In that case the architect has still at his command the larger and heavier cypress shingles, or occasionally he restores the proper scale to his design by doubling the shingles in every four or five courses, obtaining from the heavier shadow cast by this greater thickness a grouping of the small shingle units into greater divisions of more size, giving them importance on the design. This, of course, adds to the expense and—in some localities—may possibly slightly increase the tendency of the shingle to rot where the double courses retain the moisture and cut out the ventilation. In some country locations, native shingles can be bought as low as $2.00 and $2.50 a thousand, but these are made from softer woods, often without regard to the direction of the grain; and they rarely—or never—can be obtained without a great number of knots, which add neither to the appearance of the roof nor to the life of the shingle after it has been secured in place.



The appearance of a tile roof is improved when the various tiles are left open at the eaves, producing the interesting wave line

By means of stain, the shingle is adapted to run almost the entire gamut of color expression. Barring the fact that the darker wood shingle—such as the redwood or red cedar shingle—will not take the lighter stains without considerably modifying the color pigment, the white cedar can be toned from the most delicate shades up to the darkest, the latter obtainable only in the darker grained woods. If stained, the shingle should be dipped before placing upon the roof, so that not only the outer exposed face, but the butts, the sides and even the back receive a thorough coating of the pigment, or the preservative. In this way the life of a shingle is considerably prolonged. If stain is applied to shingles after they are laid upon the roof, it should be of the thinnest possible quality. A thick stain will merely run down to the lower edge of the butt and form a ridge above which water collects, having a tendency to rot the shingle course below. Paint produces the same result to even a greater degree. Therefore a painted roof lasts less time than a natural shingled roof. A shingled roof, covered with a thick coat of stain after the shingles are laid, is likely to last less time than if the shingles were left natural; and the adding of the stain to the shingle by dipping before it is put in place will probably increase the life of the wood in the neighborhood of twenty to twenty-five per cent. This just about pays for the extra expense of stain and dipping, but the advantage—aside from the fact that it is so easy by the use of stains to bring the roof into its proper harmony of any color scheme desired—lies in the fact that the color of the roof is kept pleasing from the very moment of laying up to the very end of the life of the material. The dipped shingle, of course, absorbs a little more of the material than when it is applied with a brush, and it is also considered more of a bother to lay by carpenters, and consequently it costs a little bit more on both these items; but it is well worth the additional sum.

In using color on shingles, especially in the darker tones, the result is likely to be too dense, heavy and "stodgy" in effect. In the lighter shingle colors the different texture of the wood, and the varying amount of stain it may absorb by its varying porous qualities, make certain minor gradations that soften the effect of



A mottled effect produced by unstained shingles allowed to weather for a time is attractive



The use of shingles may be varied to produce pattern effects of various lines such as is shown here

the color when seen in a mass upon the roof. This same result may be produced artificially by the use of two or three colors of stain, nearly enough related to be harmonious; if some of the roof shingles are dipped in each color and then mixed all together and the carpenters make selection merely for size as they are laying them upon the roof, good results are obtained. In the course of a year the roof wears into a pleasing softness of tone that forever prevents the color from seeming to be aggressive and overpowering the rest of the building. Such color combinations as a weathered gray, a moss green and a brighter yellow or green can be mixed in proportions to produce the general effect of a lichen-covered roof; and such colors as browns, reds and yellows may be mixed to get the general effect of the uneven coloring of a tile roof, for instance. The effect of the purplish sea-green slate roof can be nearly simulated in shingles, provided that color scheme seems desirable to the designer of the dwelling. In fact, the variety at hand is infinite.

In certain sections of the country some stains combine with rain water to react upon roof flashing, so that the metal is eaten out very rapidly, and leaks result from that cause. In some cases an acid is formed that also affects the metal gutters and conductors and eats them away. A zinc flashing will last as long in the shingle roof as the wood material, and copper flashings are generally an unnecessary expense without any resulting benefit to the owner. Of course, the reverse is true of the flashings to be used on roofs constructed of such permanent materials as slate or tile.



Flat tile or shingle tile is used to good effect, is very adaptable and is less weight than the ordinary type

Next let us consider slate, as this is generally the material next available in the price scale. It is not generally understood that neither slate nor tile, of themselves, makes tight roofs. The crevices that occur in between are so large and open that snow will creep up under the courses in cold weather and melt the next warm spell, so entering the house beneath unless some preventive is taken. The same is even more true of the tile than of the slate. Therefore it is necessary, in using either material, to have a heavy paper coating with well-lapped edges, that is of itself impervious to moisture, placed outside the boarding, and if a material of a certain spongy quality can be used, so that it will close up tightly around all nails, the best result is likely to be obtained. This can sometimes be done with a tar paper, or with certain papers, of a rubber-like consistency. Once the roof is made tight in this way, the outer surfacing, either of tile or slate, may be applied with perfect safety, and either material ensures a durability to the roof, as well as a protection, in case of fire on adjoining property, from the non-inflammable nature of the material employed, that is not the case with wood.



The slight irregularity in the laying of the old tile roof produced interesting texture effects

A few years ago, slate, when used, was either of the densest and most evenly selected black, as smooth in surface and texture and as thin as was possible to be obtained, or—this in the period of the Mansard roof house—it was sometimes cut to hexagonal, diamond or other forms of geometrical shape, and laid in alternate layers or strata of contrasting colors generally such as black or red. To-day—largely through missionary propaganda and advertising efforts, all this has been changed. The endeavor now is to obtain a slate roof of irregular texture, and of varied color and thickness. It has been shown how, in English and other foreign roofing of older times, the slate was selected and laid so that the heavier larger pieces were around the eaves and then were nicely graduated in size and thickness as the roof neared the ridge course, where the smallest and thinnest slates were used. Thus beauty was obtained from irregularly cut slate, in the resulting charm of texture and softening of shadows upon the roof. A method of mixing slate so as to use the varying colors of different qualities upon the same roof, is by employing mottled purple and green with the solid purple and green slate, for instance, to blend the two colors together, or gray and green upon the same roof, along with other combinations available within the scope of the material. Of course, either of these methods adds expense of assorting and handling, and this expense is increased when an attempt is made to grade and select the slates for varying rows for their thickness and size.

It is true that the effect of a "mixed slate" roof may be obtained at a less expense by the use of "fading" slate, generally of little thickness, when after a few years considerable variety of tones in the various slates will be brought out from the action of the air alone, but in this case there is some uncertainty as to the final result, and often some slate turns a most unpleasant rusty yellow. This makes the cheapest form of slate roof. Of course, the cost of the slate also increases directly as its thickness is increased. The commercial slate is generally of ¼" thickness, 3/16" being sometimes marketed; but unless the material is very firm in texture, this thickness is likely to break or crack, when various slates may drop off of the roof and give an opportunity for the weather to penetrate the house below.

We sometimes see a small cottage with slates of enormous thickness, entirely out of scale with the design employed on the roof. At other times we see slates for five or six rows in one size, and then suddenly change to a 2" or 1" less exposure for the next five or six rows, producing a distressing crudity of effect because the difference is immediately apparent to the eye. In

(*Continued on page* 68)



Water Supply in Town and Country

THE IMPORTANCE OF WATER SUPPLY IN THE SELECTION OF RURAL PROPERTY—THE VARIOUS SOURCES OF SUPPLY AND THE MEANS WITH WHICH THEY MAY BE UTILIZED—THE MODERN SYSTEMS IN USE, THE SPECIAL ADVANTAGES OF EACH AND THE CONDITIONS UNDER WHICH THE BEST ARE OPERATED

BY CHARLES E. WHITE, JR., M. A. I. A.



WATER supply means so little to some indifferent house owners *before* the house is built that it is not surprising that many mistakes are made in providing a water supply which proves inadequate *after* the house is completed. Most mistakes become apparent when it is too late to correct them, for many house owners are so anxious to begin actual building operations, and they spend so much time over house plans and so little over that more prosaic side of the problem, the water supply, that the latter is often neglected.

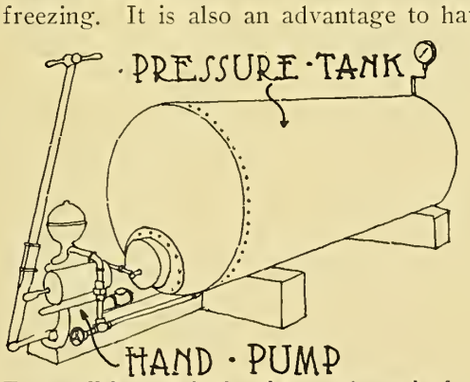
Nothing is more necessary for the successful operation of the various departments of the house than pure water and plenty of it. At the beginning of planning—yes, even before the building site is purchased—consideration should be given this all important branch of work and the owner should ask himself these questions: "Where will the supply of water come from? Is it pure? Will it prove abundant? Can it be economically piped to the house?"

Those who live in town will not find it necessary to consider the problem quite so minutely as those who live in the country, but town dwellers should understand something about the source of their drinking water and the proper way to pipe it to the house for connecting with the various plumbing fixtures.

When one is contemplating purchasing a lot in a town where one has never lived, it will be well to investigate the water supply proposition before buying a lot. Procure a sample of the water and have it tested. This can be done by any chemist and the charge for such service is so slight that it is well worth while. It is also well to ascertain what the local water pressure is, to make sure that it is sufficient to provide for a copious supply of water to the house at all times when brought through a ¾ inch service pipe (the standard size for services allowed by most municipal water works).

Although a ¾ inch pipe is usually the largest tap that will be allowed by the water company on its mains, it is frequently possible to take more than one ¾ inch tap for large houses where a ¾ inch flow of water might be insufficient. Thus two or three ½ inch or ¾ inch taps can sometimes be taken from the main, bringing them by means of bends into a single 1½ inch service line to the house. On large places where there is to be a house of good size as well as a garage this is a good way to do.

All water pipes inside the house should drain back to the main shut-off just inside the cellar wall so that in the event of closing up a house in winter during the absence of the owner, water can be shut off and the entire contents of the pipes drained to prevent freezing. It is also an advantage to have every subsidiary line of pipe fitted with a valve so that one line can be shut off and drained without interfering with the operation of any other. In making repairs this will be found a great convenience and it is surprising that more owners do not insist upon this method of piping when it costs so little more than

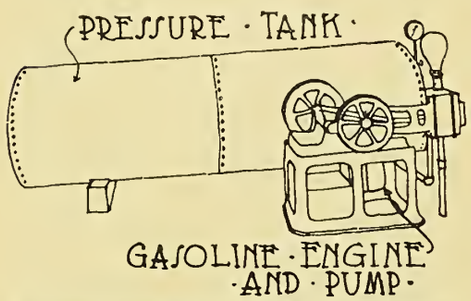


For small houses the hand pump instead of a power-driven one may be used for securing compression

the ordinary piping without the simply operating cut-offs.

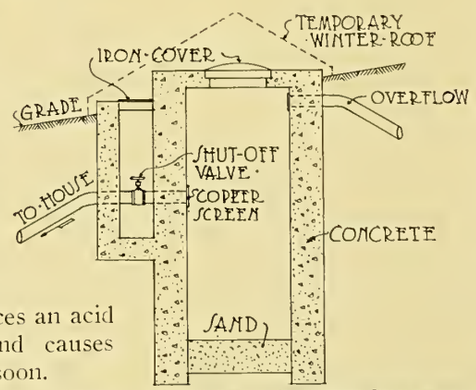
In some localities just at the edge of town where the house can be served either by the municipal water works or by one's own water supply plant, owners are frequently in doubt which to choose. Water supply under such circumstances should be determined by cost of operation. One can figure quite accurately the cost of operation of a water supply outfit operated by a gas engine or electric motor. Manufacturers' figures can usually be depended upon and the house owner should first estimate the cost of water furnished by the municipality and compare it with cost of water supplied by one's own plant. Of course the only fair way to judge of the two systems is to take into consideration the quality of the water furnished as well as its cost.

Artesian well water supplied by so many municipal plants is frequently so hard as to make it necessary to have two kinds of water in the house, town water for drinking purposes and "soft" water for laundry and bath. Much artesian water contains such a percentage of lime that it is impossible to get up a good lather with it. There are several compounds that can be bought to soften hard water for the bath, most of which consist of powder or lumps to be put into water before bathing. These produce water approximately "soft," but not so good as rain water.



A pressure tank supplied with water by means of a gasoline engine and pump

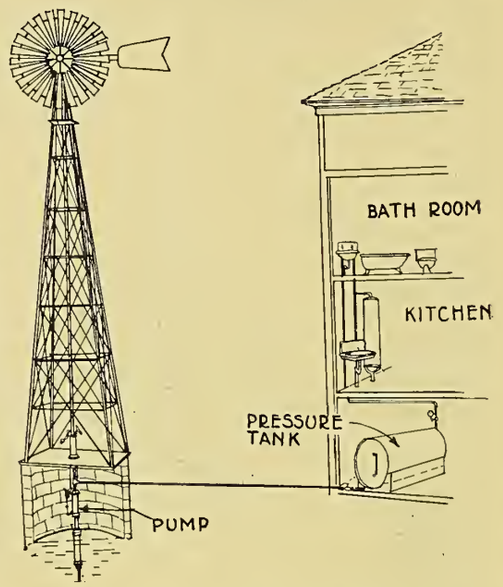
Lime precipitated by artesian well water when it is heated (as in the hot water heater and range boiler) is the source of much trouble in plumbing and heating pipes and radiators. In some places, also, the heating of artesian well water produces an acid that attacks pipes and causes them to disintegrate soon.



A concrete cistern renders mountain spring water available

To offset some of these troubles caused by artesian well water it is a very good idea to install a separate water supply system of "soft" water, piped to the laundry tubs, kitchen sink and bathrooms. This usually consists of a compression tank in the basement drawing water from a cistern built in the yard, fed by rain water from the roof by means of the downspouts.

The compression tank in the basement is operated by a pump run by a gas engine or electric motor working automatically, the pump forcing water from the cistern into the pressure tank, the latter being a boiler-plate tank built to withstand considerable pressure. Forcing water into the pressure tank bottles up air contained at the other end of the tank, forming, in fact, compressed air. The more water forced into the tank, the higher this air pressure which sends water from the tank to the various fixtures in the house, the entire operation being automatic. When a faucet is opened, water is supplied from the tank under pressure and after considerable water has been used the pressure falls in the tank, releasing an automatic switch which starts the pump again and forces more water into the tank, thus again increasing pressure. When the pressure has arisen to the proper point a switch automatically shuts off power and the pump stops.

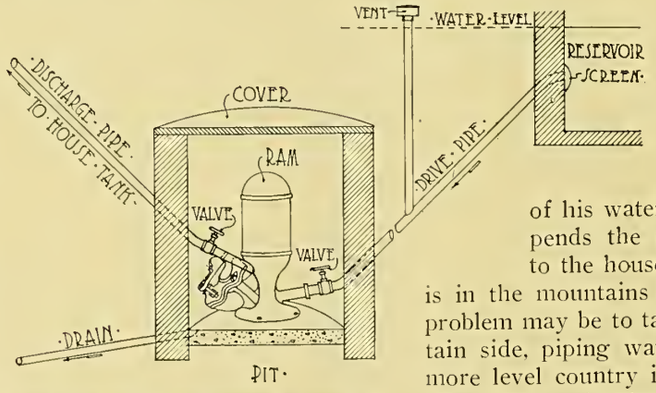


The best type of windmill installation has a pressure tank in the basement

Of course when soft water in addition to hard water is piped to the various fixtures, a third pipe line and faucet are required at each fixture. Thus, hot soft water is delivered at one, cold soft water at another and cold hard water at the third. In many houses soft water is carried simply to the laundry tubs, hard water being used at the kitchen sink and in the bathrooms. When special soap is used to counteract the effect of hard water this is a fairly satisfactory way.

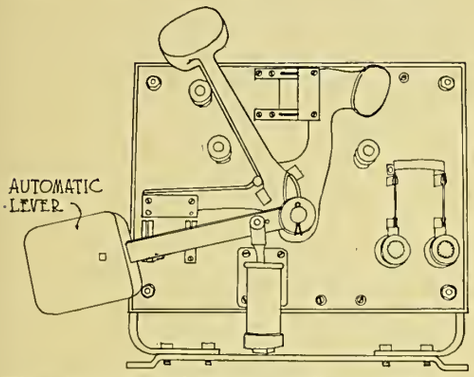
Instead of using a pressure tank operated by electric motor or gas engine, many house owners install pressure tanks, operated by a hand pump. With these it is necessary to pump the tank only about three-quarters full of water once in so many hours, depending upon the amount of water used. This is a perfectly practical installation for small houses where consumption of water is not too large, for hand pumps operate easily by means of a lever pulled forward and backward.

When the municipal water supply is taken from a river or lake the water is usually sufficiently soft for all purposes, making it unnecessary to have an independent soft water supply. In this case the owner need merely have the water tested to make sure that it is pure and fit to use.



The hydraulic ram system is simple and effective

For those who cannot use, or do not desire to use the municipal water system, there are many ways open to procure an efficient, adequate supply of pure water. The first thing the country house owner should consider is the source of his water supply, for upon this source depends the proper system for piping water to the house. For instance, if the new house is in the mountains a most practical solution of the problem may be to tap a spring high up on the mountain side, piping water down to the house. Or in a more level country if water is to be brought from a stream or pool a hydraulic ram may be advisable to force it into the house. A driven or dug well may be

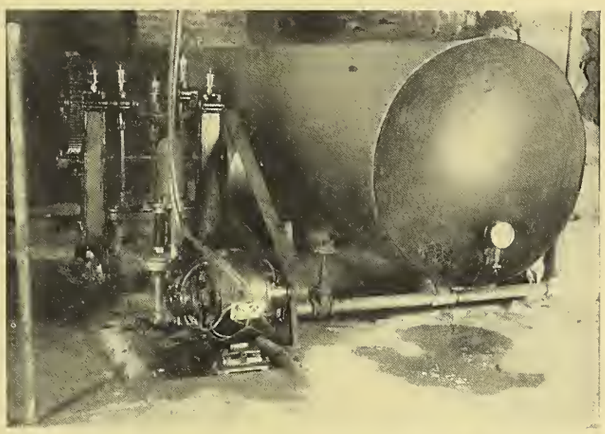


This electric switch automatically controls the electrically driven outfit

more advisable than either, the water being discharged by a compressed air outfit contained directly at the well, or the water may be sucked to the house by means of a pump in the basement of the house and forced to the various fixtures by a pressure tank.

By far the majority of country houses are supplied with water from a dug or driven well and this is usually the most satisfactory solution of the water supply problem. Whether to dig a well or "drive" one is largely a matter to be determined by local conditions. Old farms, so often bought and modernized, usually have a dug well somewhere on the place which in many cases proves adequate to supply the estate with water. In using an old well of this sort, however, one should be particular that it is located far enough from buildings to admit of no contamination. The water should be tested and pronounced pure.

It is general practice now in most sections of the country to "drive" wells instead of digging them, for the former kind can be sunk to a deeper level than is usually possible with dug wells, making it possible to tap that larger and purer supply of water which lies deep below the surface. Driven wells vary in depth from thirty or sixty feet to 300 feet or more, according to location. The process consists in boring or "driving" a hole (usually four to six inches in diameter) by means of a well drilling machine (operated by a professional well-driver), the hole afterwards being filled with pipe (called "casing") to which the pump is subsequently attached. Prices for these driven wells vary in different sections of the country but average about as follows: Six inches in diameter, $2.25 per foot; 5 inches, $1.75; 4½ inches, $1.50, including the casing.



A basement pressure tank equipped with an electrically driven pump

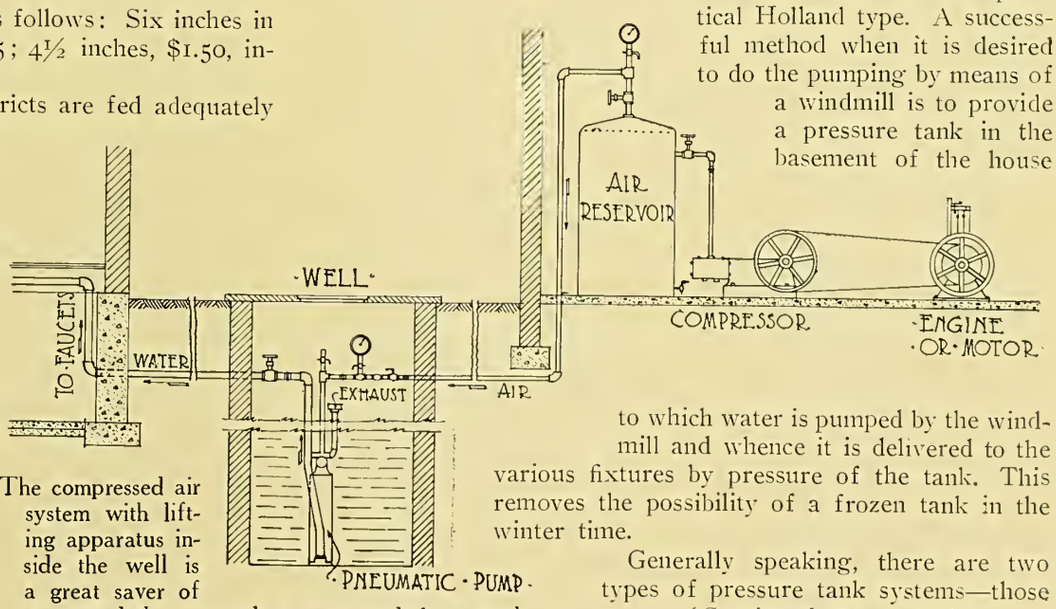
Many houses located in mountain districts are fed adequately with pure water from a spring by the simple means of pipes laid from the spring to the house. When the spring is high enough above the house to give a good head of water at the fixtures this is a practical way to get a supply of water. After locating a spring that flows throughout the year, a concrete cistern should be built, enclosing it, containing pure sand in the bottom through which the spring can bubble. The outlet pipe (from which water flows to the house) should be covered with a fine, copper wire screen to prevent any sediment from entering the pipe line. At the top of the cistern build an iron or wooden cover. With a flowing spring of capacity to fill and maintain a good sized cistern (holding—say 120 barrels), there should be an adequate supply of water.

If the spring is not situated high enough above the level of the house to give good head to the water it will be necessary to install a hydraulic ram below the spring to force water into the house under pressure. A hydraulic ram is an ingenious little device by which water lifts itself from pool to house. The flow of water from the pool to the ram by force of gravity propels a column of water upward to the house, a portion of the water being wasted in the operation. Water at the house end of the line is stored up in a storage tank (from which it flows by gravity to the fixtures) or it can be delivered to a pressure tank for feeding the fixtures. The hydraulic ram works simply by utilizing the weight of a body of water to drive a comparatively small amount to a considerable height. When once installed it needs practically no repair or attention and it has no operating expense.

The same conditions that control the use of spring water for supplying a country house also control any stream, pool or lake from which the owner may desire to obtain the water supply for his house, bearing in mind always, that no source of water should be considered until it has first been tested by a reliable chemist.

In many instances a hydraulic ram works well at stream or pool, or frequently it is more practical to use a compressed air outfit for forcing water from the source of supply to the house. For the benefit of the reader who is considering water supply for his country place it may be well to review here a few of the standard systems which are available for this purpose.

In the first place, there is always the windmill outfit where a windmill located directly over a driven or dug well pumps water into a high tank from which it is delivered by force of gravity to the various fixtures in the house. There is no reason for windmills being the unsightly stacks they so often appear. By inclosing the framework to harmonize with the architectural scheme of the outbuildings proper, much more pleasing appearance is obtained, or, as is shown in the illustration at the head of this article, the windmill may be of the decorative as well as practical Holland type. A successful method when it is desired to do the pumping by means of a windmill is to provide a pressure tank in the basement of the house to which water is pumped by the windmill and whence it is delivered to the various fixtures by pressure of the tank. This removes the possibility of a frozen tank in the winter time.



The compressed air system with lifting apparatus inside the well is a great saver of space and the water does not stand in a tank

Generally speaking, there are two types of pressure tank systems—those

(*Continued on page* 53)

Mistakes We Made In Building Our House

A PERSONAL EXPERIENCE IN HOME-MAKING AND THE ERRORS IT BROUGHT TO LIGHT—VENTILATION, HEATING AND OTHER VITAL CONSIDERATIONS

BY CHARLES K. FARRINGTON

I DO not suppose we made more mistakes than does the average house builder. We had an architect, and told him before he drew up the plans and specifications what we thought we wanted. After we had lived awhile in our house we found how different many things might have been.

Take the cellar, for example. Few housebuilders pay much attention to this part of the house, often—I might add—to their cost. The cellar is used a good deal, and the health of the family may depend in a measure upon how it is constructed. We did not plan for coal space. We did not think of the necessity of doing so. Consequently our supply of coal has to be placed over the piping from the heater. This is always objectionable. The piping may be injured by the coal rushing against it when it is being put in, or a leak may develop underneath the coal, making much labor necessary to reach and repair it. We found out also that in common with many housekeepers we could save fifty cents per ton on our winter's supply of coal for range and furnace if it was put in during the late summer or early fall. In our case this would mean a saving of ten dollars a year. When planning for your furnace to be set, see that there is sufficient coal space near it for the entire winter's supply of coal, and that no piping is in the way. Then it will be in a position where it can be handled easily without undue labor when the furnace is coaled. We have many times wished we had planned for this when we built our home, and we could easily have done so with no extra expense.

"Outside flap folding cellar doors" should be avoided. They are very expensive to keep in repair; slamming them down will injure their hinges, and the wood also rots rapidly away. An ordinary door in the side of the house is vastly superior. Then there is no snow to clean off the cellar doors in the winter time, nor do they freeze up as the outside kinds do, and in summer a wire screen door can be used, thus largely ventilating the cellar. A door placed in the side of the house can often be arranged to open directly upon the kitchen stairs leading to the cellar. Such an arrangement economizes space, especially if the back stairs from first to second floors are located directly over the cellar stairs. A little care in planning these details will save much valuable space.

The cellar should be provided with plenty of windows opening directly to the outside air, and not underneath piazzas as a number of ours did. If windows open so they do not ventilate as they should. If a wire door is used in connection with a door set in the side of the house, and a good number of windows, the air in the cellar will be kept pure and sweet. People sometimes wonder how bad air from the cellar comes through the house. It does so easily, through the walls, directly from the cellar. Also a damp cellar will make the first story rooms very unpleasant to live in.

Our plans showed room for the kitchen range to be set in the chimney, but it was found impossible to do this because sufficient space had not been allowed for the range and hot-water boiler next to it, also two doors, one opening into the pantry, the other into the laundry, one door being located on each side of the range. The range therefore was set next to the chimney. This wasted room, and room is always at a premium in a kitchen; also the kitchen was much warmer in hot weather. This same error made it impossible for a third story room—through which the same kitchen chimney passed on its way to the roof—to have an additional window. The plans showed a window on each side of the chimney, but it was possible to place but one. Mistakes like this are very common in plans, strange to say, and the housebuilder should plainly state the number of windows he *must* have to his architect, and leave nothing to chance.

A range for the kitchen with one large oven instead of two smaller ones we have found from actual tests to be far more serviceable, and we discarded our two oven range for one with a single oven. The two oven ranges have of course a much larger fire pot and consequently burn a far greater amount of coal. At most times a single oven with a shelf in it will give an abundance of room for the cooking of an average family. In such cases if a double oven stove is used it causes needless expense. We found this so after a thorough trial. Also we had too much hot water as too large a water back came with the large fire pot, and we wasted much water by being obliged to let it off at frequent intervals to prevent damage to our boiler by steam from overheated water. All such details one learns from experience, but it is costly; a far better way is to learn from others and make a right selection at the start. Of course unless such matters are brought before a housebuilder's attention they will probably not be considered. Few persons think to inquire about the size of the fire pot, this of course determining the amount of coal the range will burn. Small details as regards attachments, finish, etc., are usually considered, but the important item as to how much coal the range will burn is too often entirely ignored.

A combination gas and coal range is a nice thing to have and saves much room in the kitchen. Our kitchen was not well ventilated; windows should be provided on at least *two sides* of a kitchen so as to secure sufficient air from outside.

The back stairs leading from the kitchen to the second story were also a failure. Care in designing them was not used, consequently sufficient space was not left to make stairs with square platforms at the turns. Instead, the steps at the turns were of the kind that go to a point at one side. This, of course, makes the stairs dangerous, yet such stairs are used. Do not allow them to be used in your home; a very bad accident is likely to occur at any time. Our third story stairs were also poorly planned. A room above them made it impossible for a large piece of furniture to be carried up them to the store room located on the third floor. Insist upon having stairs which are designed for *use,* and which will allow furniture to be taken up or down them without damaging woodwork or walls. Ours are not so and we have suffered much inconvenience thereby. Insist also that hand rails shall be placed on them. Without hand rails stairs are very dangerous, but ours did not have them until we put them up at considerable expense after living in our home awhile.

A servant's bathroom was built off the laundry without the cellar being built underneath it. Under no circumstances allow such a thing to be done in any house you build. The warm air from the cellar, of course, could not protect the plumbing, and each winter much damage resulted. The idea that warm air from the laundry and kitchen would warm this extension proved an absolutely mistaken one. It is necessary to have the space between the floors warm also to prevent damage to the traps. Building the bathroom over the front door vestibule is also a very bad practice. Often this is done in houses built these days when two bathrooms are provided, and even small houses are now provided with two bathrooms because the convenience of having them is becoming more and more realized. "The owner's

(*Continued on page* 48)



Some Building Economies



SUGGESTIONS OF POSSIBLE LOW COST METHODS OF USING MATERIALS—SAVING IN STRUCTURE AND PLAN —INGENIOUS WAYS OF USING STOCK WOODWORK TO GOOD ADVANTAGE

Rim sash when finished and set on end may be fitted into a frame, making a row of casements

'Rim' Sash

BY WILLIAM DRAPER BRINCKLE

THE lure of the bargain-counter lies over us all—over you, sir, just as strongly as over madame, your wife. No, I'll admit you don't spend five dollars' worth of time, temper and vitality to buy a yard of 12½c. stuff for 11¼c.; but you do chase rainbows even more industriously, when it's a question of building your house. *You* are going to get a home at a most wonderfully low cost—you are going to buy your material yourself, and hire your own workmen, and employ all sorts of startling innovations. Likewise (though you don't know it) you are going to buy some very valuable experience—and pay full price for it, too!

I have tried all ways of building; and absolutely the cheapest way is to have one general contract to cover everything. Make one man responsible, and then hold him responsible. Otherwise you'll be met with the endless cry, "That's not my fault!" The workmen make a glaring mistake, for example; to correct it will waste your material most shamefully—but nobody is responsible! Some enterprising small boys enter the unguarded building, and merrily do a few hundred dollars' worth of damage; of course the foreman *ought* to have locked the door, but he didn't, and as a result nobody is responsible!

Not so long since, I overheard two mechanics talking:

"Say, the boss's doin' this here job by the day, ain't he?"

"No, by contract."

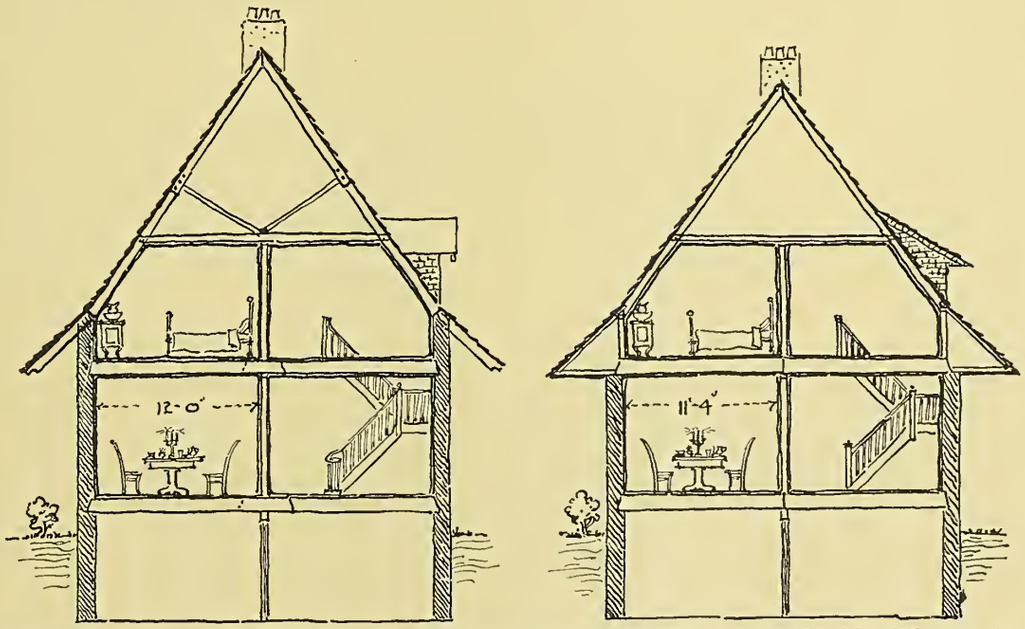
"Oh, that's a different story; we want to quit loafin', then, an' git a move on us; didn't know it was a contract job!"

Such a conversation is characteristic, and merely shows that anyone not fully familiar with the details of building is certain to be very much disappointed when he launches himself in the midst of its complexities.

But there is a way of cutting the cost of the small house—Economical Design. The saving that one can effect by proper care in this is sometimes very startling indeed. For instance, I recently planned two houses; in one I was left free to follow my own inclinations, but in the other I wasn't. The cost of the first was $1.67 per square foot of floor area, whereas the second was $2.19, an increase of over thirty per cent.!

Now, the saving wasn't in any one large item: it was in a great number of small items. These are worth considering.

Here are cross-sections through two small houses. There's just about the same amount of space in each, but I'll wager that the one at the left will cost fully twenty per cent. more than the other. The rooms, for instance, are 12 feet wide, just 8 inches too much for a 12-foot joist, and so the next size — 14-foot — must be used, thereby wasting 16 inches. The house at the right is made a trifle narrower, and we use 12-foot joists with no waste at all. So with the rafters: we just can't use 20-foot lengths in the first house, and have to use two 12-footers—22-foot rafters are very seldom carried in stock. That means additional labor and material for bracing and splicing, whereas the slant of rafters in the other design is so adjusted that 20-foot sticks are just long enough.



These two houses containing about the same amount of space show a considerable difference in cost. The design at the left cannot use stock lengths of joists and rafters as can that at the right. This latter shows possible saving in walls at the eaves and in construction of dormers

The eaves of the first house are open, with finished show-rafters of 3" x 6" yellow pine; the second house has closed eaves, carried by rough pieces of 2" x 3". That also means the omission of 4 feet of brick wall. Finally, the right-hand house has sloping

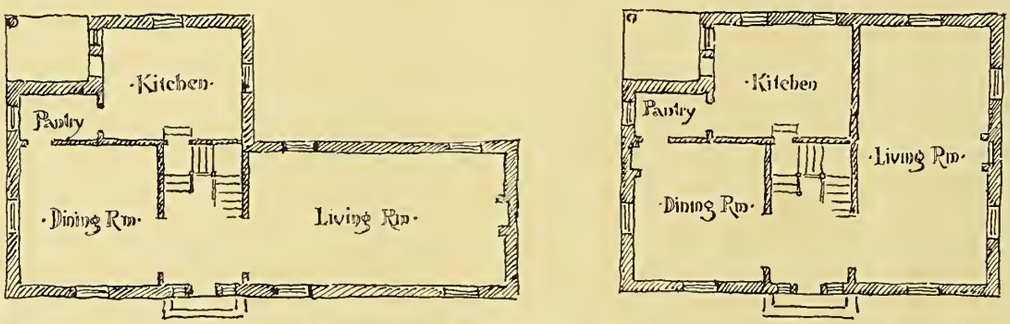
"Dutch" dormer windows, while the other has peaked-top dormers, far more expensive to build.

And yet, I'll wager that most people would consider the house built from the design at the right the more attractive house when finished!

Very often such a pet plan is devised as Plan I, and insisted upon regardless of the fact that it has twenty per cent. more outside wall surface than a compact arrangement like Plan II. Outside wall is very much more costly than partition wall; besides, a long-drawn-out plan compels more or less waste space for passages to reach the bedrooms; and passages cost at least a dollar and a half per square foot. Amateur plan-schemes are always more or less wasteful and uneconomical; that is, of course, to be expected. If one is willing to supply the extra funds, one should most assuredly have a house planned exactly according to one's own fancy; but too often the client either will not or cannot pay the difference. In such cases one should give some latitude to one's architect, and permit a little rearrangement of the plan; too many clients seem to forget that the really skilful architect is just as expert in planning as he is in exterior designing.



Overburned bricks when laid with the headers to the weather give an interesting effect of color and pattern



The house at the left would be very much more expensive to heat that than at the right. The square plan shows an economy of outside wall and a saving in passages to reach the bedrooms

One of the most serious items of extra cost is the millwork—the doors, the windows and so on. If one can get these in "stock"—that is, buy them ready-made—there is a saving of from fifty to one hundred per cent. over "special" or made-to-order work. In a six-room cottage this saving will be from $50 to $100, and in a larger house it is even greater in proportion.

Now, to use stock millwork properly is a difficult matter; it means immense labor and research on the part of the architect. It is so much easier to make the detail drawings for whatever quaint conceit comes into one's head, than painfully to puzzle over stock catalogues, revising one's ideas to fit! Nevertheless, it's surprising what wonderfully good results one can get out of most unpromising material. Casement windows, for instance, do not come in stock, so one takes "rim" sash, sets them on their sides and lets the carpenter make simple frames for them. Paneled wainscoting is extremely costly, but paneled cupboard doors are very cheap, and one can make very satisfactory effects out of them. Colonial doorways with sidelights are high-priced when made "special;" but with a stock five-cross-panel door, a pair of stock eight-light sash, two cupboard doors and some stock molding, a very satisfactory substitute can be had; or, by using three cupboard sash and glazing them with simple leaded glass in Colonial pattern, one can get still better effects.



If a stock door is purchased the architect can combine stock sash and cupboard paneling, in an effective Colonial doorway

For very large windows having more than twelve panes, "factory" sash can be had. These will perhaps show some small defects, but a little paint and putty will cover up everything.

Now, many will insist on hardwood finish. "I can buy it for almost the same as soft wood," they say. Quite true; but it takes twice as long to install, and you pay your carpenter a good stiff sum for this. Cypress, pine or redwood will stain up very attractively; even hemlock, so treated, has a wonderfully beautiful grain, and has been used in some very costly houses.

Be careful of the stairway: quirks, twists and spirals are very costly things. If you study some of the best old Colonial work, you'll be surprised to find what extremely good results were often obtained on very simple lines. Fussiness doesn't necessarily spell beauty.

Now, another point. Perhaps you have seen a most attractive little cottage of field-bowlders, built for an absurdly small sum. Exactly; field-stone could be had for the picking up, over there, but you may have to pay a hundred miles of freight, besides three rehandlings; and so, stone will be the most expensive thing you can possibly use. Brick, we'll say, is made almost at your very door. Suppose you pick out the overburned, blackened "arch" bricks, and use them. Build the wall so that only the ends of the bricks show — no "stretchers" whatever. This gives a wonderfully picturesque texture; dark black-brown tones, with a sparkle of lighter tints. Of course, these bricks can be had very cheaply indeed.

Always use local materials as far as you possibly can; a skilled architect can get good results out of many old things, no matter how unpromising they may seem at first. Even concrete blocks will make most beautiful little Colonial cottages, provided one insists on the smooth-face

(*Continued on page* 52)



Ceilings should be low to gain the effect of homelikeness; when over 8 feet 6 inches the room is apt to appear chilly and stiff. Casement windows planned in rows are always attractive; this bay is seen from the outside in the lower picture on page twenty-four

The Way the Architect Works

AN EXPOSITION OF THE ESSENTIAL CONSIDERATIONS OF HOUSE PLANNING THAT ENABLES THE PROSPECTIVE HOUSE BUILDER TO CLARIFY HIS IDEAS—THE DETAILS THAT GO FOR COMFORT AND CONVENIENCE, AND ADD TO THE APPEARANCE OF THE HOUSE

BY ALLEN W. JACKSON

Photographs by the Author, Thos. Ellison and Others

THERE is in the lay mind an ignorance of how an architect approaches the problem of building a house and too often a misunderstanding of what he is trying to do. There is an idea altogether too common that the business of an architect is to hang trimming on the outside of the building and to torture the inside into cozy corners, that he is a luxury, a sort of house milliner, a kind of parasite who expends his efforts in making a great number of superfluous drawings. It is the object of this paper to try to show the architect's true function, his real relation to house building, and the methods which he follows to attain his ends.



A beamed ceiling strongly emphasizes the horizontal effect of a room

On an architect being informed that his services are desired, the course of procedure as usual is as follows: first, he wishes to visit the land with the owner. What he is after is to learn the location, the existing surroundings and what course the future development is likely to take, the points of the compass and the general lay of the land. Unless the land is approximately level it will be the part of wisdom to have a topographical survey, at least of so much as will be covered with the house and its accessories. The rougher the

land the more necessary this will be. He will note the position of any trees, the best views, probable character of the sub-soil, the location of water, gas, electric wiring and sewer, note any building restrictions peculiar to that particular lot and any other points that will affect the work. This knowledge is essential.

Next, he will wish to have a talk with the owner to discover what his requirements are, what he *must* have, what he can do without, his particular hobbies and finally to ask what he purposes to spend, and tell him it is not enough!

If he has made tentative plans at home on the dining room table, the owner will produce them sheepishly and with many apologies, but they are often a great help.

Having got all the information possible from the owner, the architect's work really begins. Not the least of his difficulties will be the fitting of demands into the sum to be expended. In small work—that is, houses costing up to $12,000—space should be given the first consideration and the cost of the work is usually reckoned on a basis of so much a square foot, the locality and type of house desired affecting the amount. This means, then, that for so much money we can have just so much house. It is chiefly a matter of area.



The waste spaces of a house may well be planned to accommodate closets and drawers or provide a window nook



English half-timber houses, though more expensive than the house of square plan, have a charm unapproached by the buildings of flat exterior. Allen W. Jackson, architect

It is a great sorrow in the life of an architect that he is so often forced to spread his money out so thin. So many of the delectable things that hover on the point of his pencil must be sternly ordered back and a foot of area added instead. This is one of the things that they seem to do better in England, that land of enchanting country houses. There they will often build a small house or cottage and spend on it as much as would build a house twice as large; money going for heavy slate roofs, brick and tile here and there, hand hewn timbers, simple decorative plaster work or the infinite pleasure to be had in the company of cunning wood joinery and simple carving.

One cannot find fault with a young couple having a strictly limited purse for demanding area first, when at best they will get less than they desire. We should, however, like to see a larger body of people who can better afford it, willing to increase the per-foot cost; that is, who only desire a small house but are willing to spend more than a minimum sum for it. It would seem that thoughtful persons in comfortable circumstances would realize the fact that living in a home surrounded by the best work of gifted designers and skilled craftsmen is a source of real solid and lasting pleasure, a subtle influence to refinement that makes for an increased appreciation of all the world's art of every sort. Anyone who is at all sensitive to such things (and the hardest head is influenced more than it ever realizes) knows how he stands up straighter and holds his head higher before a Whistler etching, a piece of old satsuma, gilded *carcone* or faded tapestry. Oscar Wilde said, "If I only could live up to my blue china," and this is the feeling that soaks into one that is surrounded by work that skillful men can do.

But to return to our drawing board. First, we have to determine the proper location of the main rooms. Consider the simplest form of plan for a moment, the rectangular. The living-room and dining-room will each want southern sun, the dining-room should also have sun at breakfast time which determines for it a southeast corner. This will leave the southwest for the living-room. The fact that the connection between the dining-room and kitchen cannot be severed has reduced the possibilities so that with the dining-room on the southeast, we shall have our kitchen on the southeast. This leaves, by a process of elimination, only the southwest for our hall or if the living-room is given the whole west and side, our hall will come in the center on the north.

This, we will find in the case we have taken, to be a sensible arrangement.

The kitchen finds itself in the most undesirable corner where it belongs. It is a room that does not lack heat of its own and the pantry and refrigerator are about the only places in the house that should never see the sun. The front hall will also find itself in a location the least desirable for a room.

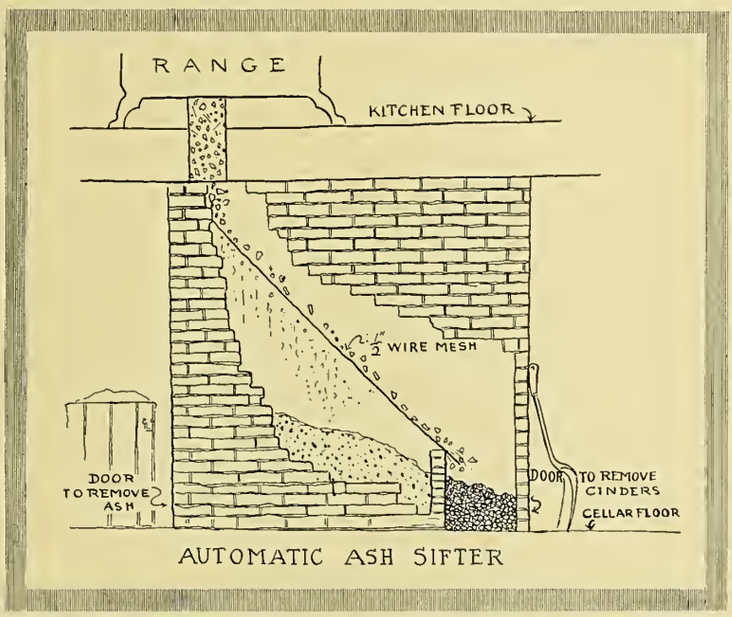
Having arrived at the disposition of our rooms in some such way as this, we can proceed to work shape, sizes and sub-divisions. The exact disposition of space in any larger or more elaborate house than this will not be possible to consider here. As in the openings of a game of chess, after the first few moves the possible ramifications become so numerous and complicated that we are soon bewildered if we try to learn them all; so here, too, the simple beginning of the four room plan is enough. Once we make our start correctly we may amplify as much as we please and as we expand the possible arrangements become infinite.

On the second floor, we shall not try for any architecture, but the problem will become one of packing in as many rooms as will dovetail together with no space left over.

It is well for the amateur planner not to forget here certain uninteresting but stern necessities that if ignored will cause confusion later. For instance, certain carrying partitions must run up through the house, one above the other for economy of framing so that joists of too great length and consequent depth need not be used. This will fix certain second floor partitions. The direction of these joists must also be considered so that the house will be tied together at the roof plate. Otherwise, the thrust of the rafters would tear it asunder.

The various plumbing fixtures should be kept over each other for the sake of economy. The stairs are one of the few things that will admit of no squeezing. In order not to hit one's head, a certain amount of room must be allowed for them, and if they take up too much room in the hall the hall must be made larger and not the stairs smaller. We must be careful not to deceive ourselves on paper. The head room under roofs must also be gone into carefully to avoid disappointment later in the attic rooms.

Speaking in a general way of houses having the same floor area, the advantage of the square over the long narrow plan is that of greater compactness. It results in being more easily heated, in shorter distances from one room to another and that there are a greater number of rooms that will have windows on two sides, while the expense of the house per square foot will be less than in the long house. On the other hand, in the long house we are able to get our kitchen and nursery further from our bedrooms. There is an immense gain in the exterior appearance of the building in that we shall have one dimension greater than the others, thus avoiding the chunkiness of the cubical mass. More seclusion may be had for the various rooms and a livelier sense of interest created because of the greater variety of the plan. There is nothing reticent about a square house; on entering the front door the whole thing is apparent. In the other, it is impossible to tell what we shall find around the next corner.



Among the conveniences that may be planned for is an automatic ash sifter connected directly with the kitchen range

It is not until we have our plan roughly blocked out as above, that the architect will give much thought to the exterior expression. To be sure, he will probably have given some consideration to the appearance of the building but it is not until the plan is determined and its essentials well fixed that he will give any serious attention to the appearance of the outside. Considering the elevations, he will first determine whether it is to be formal or informal in character, whether he will try for symmetry with its accompanying dignity or for the picturesqueness that may easily result from an informal rambling treatment. The nature of the building, its surroundings, and the predilections of the owner, will all be factors that assist him to arrive at his decision; the priority of the plan over the elevations and the greater amount of study going into it is a matter which is not understood by the uninitiated. It is the plan that is the important thing and it must govern the elevations. We shall expect, however, that each will make concessions of a minor nature to the other, but whatever the esoteric relationship may be it is almost always to be noted that a thoroughly good plan arrived at after careful study, will find as its concomitant a set of elevations waiting ready to clothe it without strain or effort. If one takes care of the plan, the elevations will take care of themselves.



This house has a variety of elevations without extreme irregularity of plan. The porch roof provides a possibility for a sleeping porch with iron awning supports as suggested

(*Continued on page 60*)



The Vital Functions of Light in the Home



HOW LIGHT INFLUENCES MENTAL AND PHYSICAL CONDITIONS—THE QUESTION OF EYE STRAIN—MEANS OF LIGHTING THAT MAY PRODUCE THE ATMOSPHERE OF HOME—HOW TO REMEDY PRESENT EVILS

BY F. LAURENT GODINEZ

EDITOR'S NOTE.—*Science has advanced much during the last decade in eliminating evils and correcting abuses, especially those connected with home living. We have a better architecture, more efficient means of sanitation, but in one department of the home we remain woefully ignorant. The question of illumination is answered to-day with little consideration of the esthetic. We are entirely unaware of the vast possibilities of light as a means of decoration and know nothing of its subtle influence upon our health and even our mental attitude. Mr. Godinez has spent much time and careful research in this field and has astonishing disclosures to make that will awaken our dormant sensibilities. Although his criticism is direct, it is of the highest order in that he offers a remedy for each abuse which he makes apparent. He does not advocate any definite equipment, but he suggests how each individual may make use of his own to best advantage, and what are the desirable requisites of new material. In this article he tells his readers for the first time the important part light plays in their lives, its physical and psychical effect upon us. In another issue he will give practical suggestions of great value and inspiration.*

LIGHT in the home is as we make it. It may be a source of comfort, an inspiring influence, an element of the beautiful, or—in the utilitarian sense—just a part of things, a servant in the house; nothing more.

There is no other product of modern civilization which exercises so great an influence for good or evil in the home. Nerves may be shattered by its violent use, despondency and melancholia brightened by its subtle influence. Eye strain and chronic headache will result from its misuse. Eye comfort and visual acuity are the rewards of its intelligent appreciation. Taken as it is to-day in allopathic doses, as an antidote for darkness, artificial light is overstimulating and dangerous. Assimilated naturally in visually palatable homeopathic form, it is a wonderful tonic; but as prescribed by the incompetent, it is pitifully inadequate, and a deadly menace to the eyesight.

Let us momentarily consider the causes for such an unfortunate state of affairs. In the wholesale manufacture and distribution of artificial light, we are confronted with the inevitable triangle of human forces, slightly modified from the conventionalized triangle of the melodrama, but still a triangle in the functional sense. In this instance the triumvirate consists of:

First; the manufacturer of energy in luminous form from coal, popularly known as "that Gas or Electric Light Company," operating by franchise as a public service corporation. *Second;* the manufacturer of energy transforming devices—lamps, which convert gas or electricity (energy) into the visible luminous form of light, and their accessories, lighting glassware and fixtures. *Third,* but by no means least, the public which is theoretically presumed to enjoy, thrive, and prosper by the combination of the first and second forces named.

When the consumer of electric energy in the form of light has fault to find with the service rendered, he invariably accuses the lighting company. In most cases, however, the fault lies with the form of the lamp or the device for transforming the energy into light. This is the weak link in the chain that connects the consumer and producer. We have advanced toward a greater appreciation of esthetic considerations in many things but we are ignorant where such consideration should apply in lighting. We might call this the dark age of lighting, paradoxical though it may be. We have plenty of brilliance but neither the conception of its proper use nor the satisfactory means to enjoy it.



While the contractor and the architect's assistant are directly blamed for the perfunctory spirit in which they have placed impossible lighting equipment in the home, it must be admitted that they are utterly dependent upon the manufacturer of lighting accessories for the data which has been quantitative rather than qualitative.

An eminent authority on interior decoration states: "The technical man, or engineer, has narrowed his perspective by an exclusive consideration of economic and utilitarian, rather than aesthetic considerations. He has knowledge of lamps and their construction but smiles indulgently, and with smug complacency at the mere idea of estheticism in lighting."—He has no appreciation for environment, knows naught of that consistent relationship between light and color, which is the essence of decoration—or atmosphere. It is individuals of this negative type who are responsible for the unrealized possibilities of artificial light and who have offensively prohibited co-operation with those most eminently qualified by nature and experience to advance the cause of artificial light—the decorator and architect.

These criticisms do not apply to the illuminant manufacturer in the sense of belittling his achievement in illuminant improvement—for in the tungsten lamp of to-day, evolved by ceaseless experiments from Mr. Edison's first electric lamp of over thirty years ago, we have a luminous medium of singular flexibility and economy. Similarly, the pioneer work of Dr. Carl Auer Von Welsbach, has given to the world an incandescent gas mantle, at least, equalling the tungsten lamp in quantity and quality of light.

This question of quantity and quality of modern light sources is of grave import. Because he has succeeded in creating an illuminant which approximates daylight and assists industrial occupation, the illuminant manufacturer is laboring under the delusion that his tungsten lamp with its white light is a universal panacea for all lighting ills. So far, however, only the industrial-utilitarian and commercial-economic aspects have received his recognition.

In the lighting of the home, the glare of day perpetuated at night by artificial illuminants is unnatural—opposed to nature's teachings, entirely lacking in that element of repose which should delicately emphasize the quiet and peace of eventide in the home.

Let us first consider the physiological aspect of artificial light in the home, and determine briefly just what constitutes ocular hygiene.

One of the necessary requisites for ocular comfort is that the brilliancy of a light source in the visual field should be restricted within certain limits. "Illuminating Engineers" who have rudely invaded the field of the physiologist, have agreed after most exhaustive controversy that light sources having a specific brightness of from

four to five candle power per square inch, down to 0.2 to 0.1 candle power per square inch as a minimum, are safe working standards for the eye. We are informed by the "Illuminating Engineer" that no absolute rule can be laid down, owing to "individually different requirements." This is a bit nearer the mark, but there is one positive method of determining whether or not the source of light is too bright. If it can be regarded fixedly without ocular discomfort, squinting, or annoyance, it is not too bright from a physiological viewpoint. Whether it is a source of pleasure and a delight to the eye, is a psychological, esthetic problem, which we will discuss later.



Do not confuse the "candle power" of "source brightness" or "intrinsic brilliancy" with the rated candle power of the light itself. The first is purely a measure of the brilliancy of various light sources expressed in candle power per square inch; and it is merely for comparative purposes that the reference is hereinafter used.

Of course, in many instances the eye is protected from the dangerous brilliancy of the tungsten lamp, by some sort of glassware, which should serve the double function of eye protection and the re-distribution of light over areas where it is required. The fact remains, however, that no illuminant manufacturer has indicated the necessity for utilizing his product with care. Undue emphasis on its economical phase has persuaded the adoption of such lights in substitution for older types of less brilliant illuminants, but nothing has been said about eye strain and its prevention.



Whatever is good in decoration expresses a consistent relationship between light and color. The atmosphere of the home as influenced by light should reflect refinement; do not desecrate its environment with commonplace lighting glassware typical of the store, the office and the factory

Since the days of the candle the source brightness of our illuminants has steadily increased. It has passed the danger mark, but the saturation point is not yet in sight. If values of from 0.1 to five candle power per square inch constitute the maximum range of brightness that is safe for human eyesight, glance at the following tabulation, and cease to marvel at the oculist's prosperity:



Source of Light	*Intrinsic Brilliancy Candle Power Per Square Inch*
Candle	3.- 4.
Oil lamp	3.- 8.
Gas flame	3.- 8.
Carbon filament electric lamp	375.
Welsbach gas mantle	20.-50.
Tungsten lamp	1000.

From an inspection of the above it is apparent that each successive development of electrical illuminants has been attended with an amazing increase in source brightness, and where a value of five candle power per square inch is considered the limit of safety, we have exceeded that limit two hundred times!

When this significant fact is realized the time will be at hand for serious consideration.

The human eye is but an extended portion of the brain, according to the most eminent anatomists—and as such must be treated as no mere auxiliary optical equipment, but instead, as a vital anatomical organ affecting in some important manner every other organ. Thus, the glaring unprotected light source, whether it be the typical light of the subway train or some too brilliant light in the home, is the unsuspected cause of many an acute headache, which with continued exposure will become chronic. Indigestion and nervous despondency have also been traced to this cause. The physiological significance of color, or quality of light in the home, brings us to the reading page. A great deal of humanity's ocular discomfort has come from endeavoring to decipher small black characters against a white page. In the days of earlier illuminants the page was perhaps insufficiently lighted and eyesight was impaired through strained perception. Then came the oil lamp with its soft mellow radiance, which has still many admirers in the student world. We *see* the small print on our reading page by contrast. The contrast is the black type against the white background, but the area occupied by the blank white paper is far greater than the area occupied by the black type. In other words, the blank, white area, which serves to reflect or diffuse light from a lamp into the eye, reflects more than is necessary to perceive the printed matter by contrast. With earlier forms of electric illuminants the white page was modified by the amber color of the light source, and against this soft, mellow background the contrast of the small black characters was less abrupt and more readily perceptible. With the tungsten lamp, the reading page is glaring white, reflecting so much light into the eye that comfortable perception is impossible.



Assuredly we desire to enjoy the economic

advantages of these modern illuminants, but let us temper their use with respect to our eyesight. With the same quantity of amber and white light on two reading pages, any person will be able to read longer, and more comfortably with the amber light.

Since the illuminant manufacturer and "Illuminating Engineer" will not recognize the obvious physiological requirements of the reading light, let every person interested in conservation of vision prescribe his own remedy, for the procedure is simplicity personified. Granting that the requirements of the individual differ, then let the individual recognize his requirements.

There is to-day, a material termed "gelatine film" which is manufactured in sheets, about two feet square. It is a thin, transparent medium employed in the theater for the projection of colored lights and the attainment of realism in scenic effects. It is available in many colors, including amber, and is practically fireproof. It may be cylindrically shaped to conform with the various sizes of modern light sources, and held in place by ordinary paper clips, such as are used in attaching office correspondence. It may be obtained at any electric stage lighting supply house, for a few cents. It will make light sources which are an annoyance to the eye, soft and attractive. It may be inserted in cylindrical form about an illuminant, without removing its shade, or globe, or glass.



Good decoration suffers from over-lighting. There must be shadows—light and shade. A touch of light against a tapestry or a sprig of blossoms—and the thing is done

Just one experiment will convincingly demonstrate its ability to transform harsh, white light into the soft, agreeable radiance of the oil lamp. Any density of color may be obtained by increasing the number of layers forming the amber cylinder.

While a fluid preparation, known as "lamp coloring" has been available for staining lamp bulbs, its application has been limited to exterior sign effects. Moreover, it is impossible to obtain permanency of color or variation of color density with its use, and the operation of "dipping" lamps in coloring solutions is fraught with many uncertainties.

The standard makers of incandescent gas mantles, recognizing sometime ago that a white light mantle was unsuited for home lighting, devised what is termed an "amber light mantle," which is most pleasing and restful to the eye. Unfortunately, the manufacturers of electric lights have not considered this matter.



Too much emphasis cannot be laid on this question of light modification. Great physical discomfort has resulted from the substitution of high intrinsic brilliancy of light sources for older types of illuminants to which their visual functions had become accommodated. Overstimulation of the retina decomposes the visual purple much more rapidly than it can be restored, and the result is retinal exhaustion followed by its attendant depression of other organic functions.

That occasional feeling of drowsiness sometimes noticeable in the brilliantly overlighted drawing-room, is due to retinal overstimulation, and the expenditure of nervous energy wasted in the continued muscular effort expended in squinting and brow-puckering to exclude the annoying glare.

Similarly those who immediately after dining peruse an overbrightly lighted reading page, add to digestive exertions the burden of an ocular-muscular action inspiring fatigue and drowsiness.

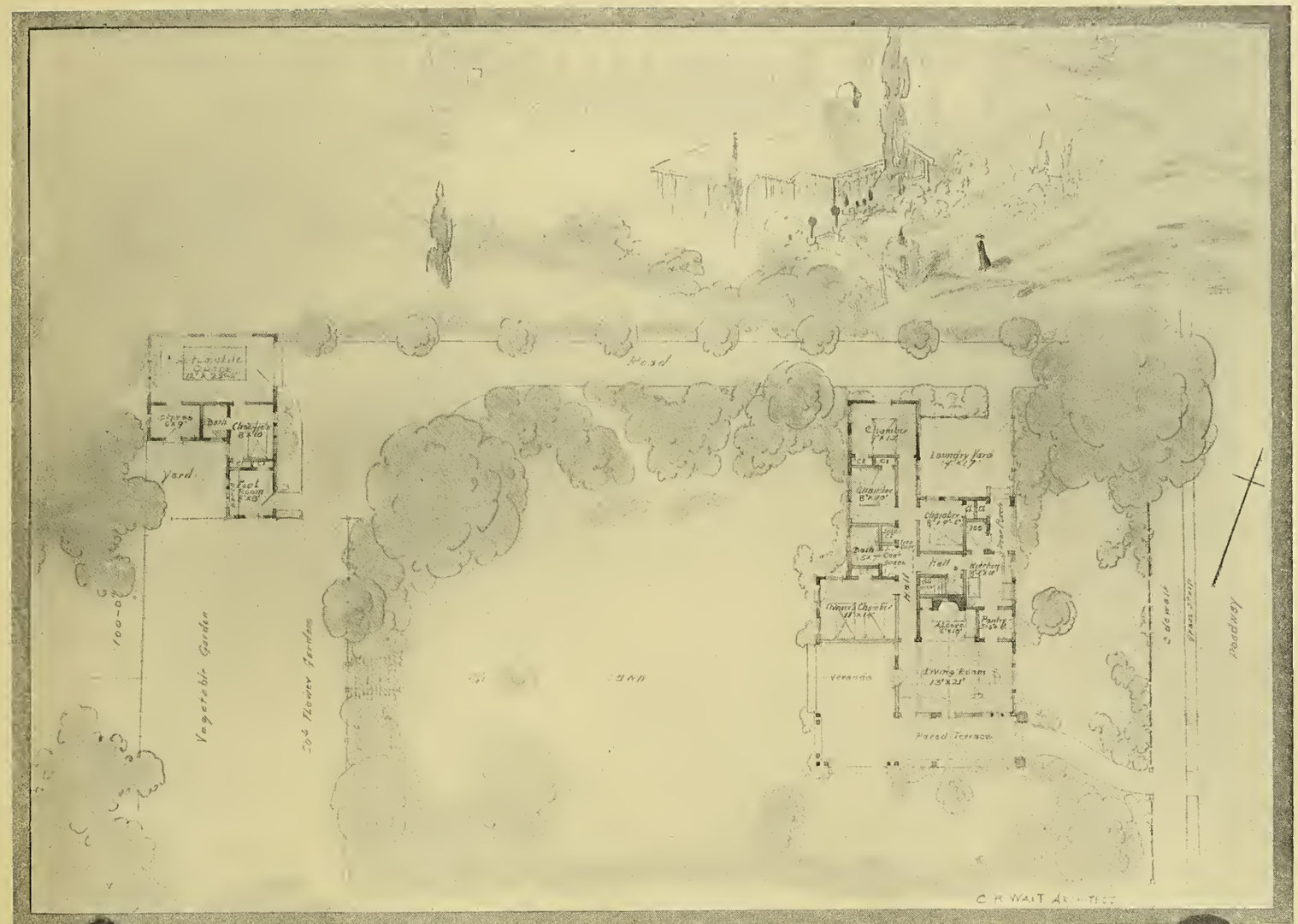
There are other reasons why a white light is undesirable in the home, and these involve psychology. Subconsciously and unconsciously we experience many sensations which are directly due to psychological precedent. Unexpected contact with a subtle perfume, a certain quaver in a musical theme, and instantly our mind reverts to some incident or personality of long ago, revivifying the past with startling realism. Through the interminable space of centuries humanity has been trained through hereditary psychological precedent to regard light as a symbol of warmth, comfort, and repose. For ages the comfort of the open fire has impressed on the subconscious mind the invariable association of that physical comfort with the coloring of the dancing flames. Recall the pictorial beauty of the setting sun, transfiguring everything with its kindly radiance, and know why nature's teaching has endeared to humanity that soft mellow quality of light which imbues the environment of the home with an atmosphere rich in tone, feeling and expression.

No woman can appear to advantage beneath the cold, harsh, white light of modern illuminants which cruelly reveal every wrinkle and emphasize every facial blemish. Even the bloom of youth pales under the brutal glare of the tungsten lamp when it is unmodified.

Schopenhauer and Herbert Spencer devoted most exhaustive research to determine the effect of music on the nerves; yet the influence of color, particularly on the overwrought nervous system, is even more definitely marked. The great student of chromotherapy, Van Blieryliet, maintains that those senses which are most sensitive to color appreciation, directly stimulate intellectuality, indicating that those individuals possessing superior intelligence are particularly susceptible to the suggestion of color or music.

(*Continued on page* 52)





Planning the Layout of the Small Lot

THE PROBLEM OF FITTING THE HOUSE TO ITS SITE—A SUGGESTED SCHEME IN WHICH THE VARIOUS POSSIBILITIES ARE ILLUSTRATED AND DEVELOPED

BY CHARLES R. WAIT

Photographs by Nathan R. Graves, H. H. S. and Others

AFTER one has decided to build and has procured his lot, it is quite noticeable that as a rule little or no pains are taken to consider exactly how the house should be located, almost the entire attention being paid to the arrangement of rooms and the disposition of the various small interior features. This is a condition we find much more prevalent among suburban homes of moderate cost than in the more extensive estates which naturally call for a wider and more comprehensive study of all the numerous features to be provided for.

In that our consideration is of the smaller dwellings located upon an average-sized suburban lot, we should accomplish more by taking a concrete example and attempting to work out a solution which in its principles at least may be applied to a vast number of problems, even though the existing conditions are somewhat dissimilar.

Assuming, then, that we have a comparatively level piece of property, with a 100-foot frontage, and 200 feet deep, sold with a restriction that a 25-foot setback shall be maintained by all buildings constructed along this and all highways running north and south, it is desired by the owner that a bungalow containing a living-room, with a dining alcove, a kitchen, three chambers and a bath be built upon this lot. He is also anxious to build a garage, with a room for a man-about-the-place, and a small shed for storing tools. Further than this the owner has no very definite or tangible ideas, except that these two buildings shall, jointly, cost him not over five thousand dollars. The matter of the ar-



Here the porch is so designed and placed that its use as a living-room is fully justified by its seclusion

rangement and beautification of the grounds is left as another consideration, entirely independent and subordinate to the rest.

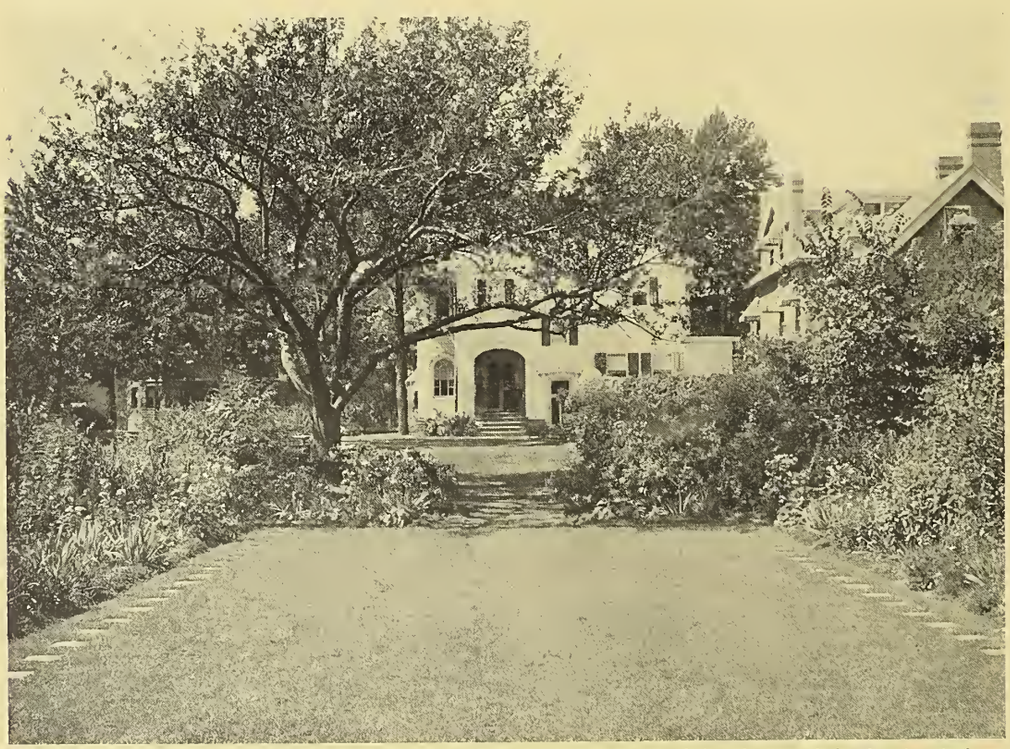
Having had our conditions thus vaguely outlined, we have two distinct problems before us. First of all, we must devise a scheme of development for his entire property; one which will not only offer him the most comfort and enjoyment, and thus allow him to derive the maximum benefit from the expenditure, but also promise an assured return should he at any time be anxious to dispose of it. Second, after having devised such a scheme, we now have before us what is the most difficult problem of all; that is, impressing upon the owner the value of disposing the various elements in the manner suggested. We must convince him that the prime consideration in the arrangement of the three units of which the house is composed—living, sleeping and service—is to give the living portions the preference of sunlight, privacy, views and the prevailing summer breezes. Thus, by locating the house as near the street as conditions will allow and as close to the northerly limits of the lot as is found practicable, the living-room and porch will derive the greatest benefit of openness and unobstructed sunlight and view. This also makes it possible to enjoy a fairly large sweep of secluded lawn area, ranging from the south to the west and outlined with mass planting which might be fringed with choice flowering shrubs and hardy perennials. Further, being so situated, the living portions of the house are retired and private, and at the same time derive the benefit of the prevailing summer breezes. The two principal chambers, having one side exposed upon the west, receive the full value of the same breezes.

The service being located in the northeast part of the house, is in most respects an ideal arrangement, in that it is removed from the more private parts of the establishment. By placing the drive leading to the garage along the northerly property line, it not only serves as an entrance-way to the back of the property but also accommodates the house service. Further, by being so located it allows the necessary going and coming to take place without encroaching in any way upon the living portions of the house.

The garage and tool-shed are placed in the extreme northwest corner of the lot, and by being so removed from the house the possibilities of noise and danger from fire are greatly lessened, while the tool-shed is of easy access to the gardening end of the property.

Back of the above-mentioned lawn area, and adjacent to the garage, would be an admirable position for a vegetable garden, cold frames, and possibly greenhouses. So located they would obtain the greatest benefit of sunlight, and such trucking as might be found necessary could easily be carried on through the garage yard.

Having very briefly indeed considered some of the reasons why the several main elements of the property should be placed as described, it might be helpful to give some description of the house itself, and thereby help to a better understanding of why the disposition and design of the several rooms should not be made independently of the rest of the property.



A house in which the elements of outlook and privacy are attained for the porch by having it face the flower garden

The living portion is composed of an ample but not large living-room, a spacious covered veranda and a flagstone paved terrace. The living-room is in itself devoted to three uses. At the easterly end the meals could be served, from which position the morning sun would be enjoyed during the entire year. The westerly end is intimately associated with the veranda and terrace, thus establishing a very close connection between indoor and outdoor life. The third use is the retirement suggested by the fireplace alcove, which is recessed sufficiently to throw it outside the body of the room, thus giving it that quiet seclusion so essential to its enjoyment.

The sleeping portion is a unit by itself, easily accessible, however, from both the living-room and the kitchen. By making it accessible from the kitchen it is possible to carry on the necessary housework without intruding upon the privacy of the living-room. The chambers have been so arranged that

one of them may be used as a maid's room, and in that case entered from a passage leading to the kitchen.

The service includes the kitchen, the pantry and possibly the laundry yard. The kitchen has exposures on two sides, thereby giving a free circulation of air, a feature extremely desirable during the summer months. Having its principal exposure on the east, the early morning light is to be had, while during the warm part of the day it is shaded, making the housework a much more comfortable and enjoyable performance. A butler's pantry is introduced between the dining end of the living-room and the kitchen. This effectually separates the two and prevents odors and disturbances from getting to the front or living part of the house.

In designing the elevations the various interior elements should be expressed, and their relation to external conditions should be strongly borne in mind. At the dining end of the living-room the windows have been made large and the eaves kept high in order to acquire the full benefit of the early morning sunlight. The opposite end of the room is well protected from the hot southerly sun by extending the roof over the porch and dropping the eaves as low as is practicable. By so doing not only is comfort added but a very strong sense of seclusion and retirement is gained.

The sleeping portion is expressed as secondary to the main living-room by its long low roof and its somewhat semi-detached character.

The relative importance of the service is expressed by continuing the slope of the roof, thereby dropping the gutter line to a much lower level than that of the dining end of the living-room. Its secondary character is further expressed by the use of small windows raised well above the floor, thus allowing the sink and set-tubs to be located directly beneath, giving them the best possible light.

We have tried to show the owner how his problem should be conceived in its broader sense, locating the various features with regard to all the larger considerations; also, how in developing each separate unit the large governing facts should be kept constantly in mind, no minor portion being determined without first concluding that it distinctly plays into the general arrangement and composition of the scheme as a whole.

Assuming that we have been successful in convincing the owner of the value of considering these various factors, and have received his permission to proceed along these lines in the arrangement of his property, we have little doubt that he will derive more pleasure and enjoyment from his venture than would have been possible had we permitted him to go his own way without giving the problem painstaking study.

There is one consideration that might bear emphasis at the conclusion of this discussion. That is the desirability of obtaining privacy for the porch. It is a modern tendency to design this feature for various uses so that it plays an important part in the living quarters of the house. In the plan suggested it may be used as a dining-room and in warm weather is occupied most of the time. We should break away from the senseless convention that places porches right along the street line if we wish to obtain such advantages of outdoor living. No one would wish to have the public gazing into his living room, why then should he make it possible to the passerby to look in upon his porch? The illustration on the top of this page shows the street appearance of a house that was planned with an eye to such things. The entrance is small but dignified, merely an entrance; the living quarters are at the opposite end and out of the way of curious eyes. Even if the kitchen is placed nearest the street to do this it is worth while, for the service end may be made quite attractive. The use of lattice as a framework for growing vines is often to be recommended.



When the house must be close to a street, have the entrance porch small and let the true piazza features face on the land

Thus we see that by overcoming our tendency to place the veranda of the house facing the street we increase the possibilities of arranging the rooms favorably with regard to light and air. Let the greatest dimension of the ground plan be other than parallel to the street.



The essential features of the paved terrace in conjunction with the covered porch, suggested in the plan, are employed here to good advantage of privacy and outlook



One of the greatest advantages of stucco construction is its flexibility of adaptation, and if well waterproofed it is highly desirable



Even though comparatively new, a brick house soon attains an appearance of age suggestive of Colonial times

House Walls and Their Making

AN EXPOSITION OF THE DIFFERENT MATERIALS, SHOWING THE ADVANTAGES AND DISADVANTAGES OF EACH — INTERIOR FINISHING OF VARIOUS STYLES

BY ARTHUR BYNE

Photographs by Mary H. Northend, Harry Coutant and Others

MASONRY, hollow tile, concrete and frame are the four kinds of walls for present-day houses, the first mentioned including brick as well as stone. Their cost is in the order named. Eliminating concrete, since it is seldom used for the walls of the entire house, we might further say that wood is but little cheaper than hollow tile. This is the result of long years of neglected forestry. Any statement about comparative cost can only approximate the ever shifting truth; ever shifting since it depends on whether the owner could use the stone on his property instead of bringing some other material from a distance, or on whether he has any means of getting any material at minimum price as in the case of a lumber or brick merchant, to mention only a few of the possible modifications of relative cost.



Although frame houses can scarcely be termed fireproof, much can be done to increase this quality. When well built and cared for they are very durable

It is more easy to speak of advantages and disadvantages than of price, since these are already fixed, except for the constant improvements that manufacturers are ever seeking to make in their products. Hollow tile is undeniably fireproof, so are brick and concrete, stone partly so, wood not at all. Wood and hollow tile provide the non-conducting air spaces which brick and stone do not ordinarily afford and are therefore warmer in winter and cooler in summer. It is erroneous to think that a solid masonry wall, because it is thicker than a wooden wall, is therefore warmer. If stone walls are cold outside they are cold inside, no matter how thick, since there are no air spaces to check the passage of cold or dampness.

As to how the various materials adapt themselves to design, care must be taken not to violate architectural precedent. Wood is hardly the material for an Italian villa; nor should the home-builder be beguiled into copying the "frame Moorish bungalows with Colonial porches" sometimes advertised. To get an artistic house, style must determine the material, generally speaking; but where the exigencies of the locality demand a certain material, the style should be chosen to suit it. To illustrate this, there is a marked tendency around Philadelphia to adhere to the precedent set by Colonial builders, of local stone laid with wide joints and finished with white wooden trim. Local architects therefore design the type of house suitable to stone, for naturally they cater to popular demand.

To take up some practical points in building with these materials it may be said of stone walls that they are generally designed too thin. Much of our country house work is reduced to sixteen inches. A sixteen-inch stone wall plastered on the inside with no furring is not an adequate protection against the

weather and the plaster is very apt to be stained by dampness. It would be no more expensive if the wall were eighteen inches thick, and if it were twenty inches its vast superiority would more than offset its slightly increased cost. Another detriment of the stone wall is that to-day we lay it up with Portland cement, whereas our ancestors used lime mortar. The former sets in forty-eight hours, the latter sometimes took a decade. The result of the modern quick method is that as the wall is laid up its own weight often cracks the cement, thus destroying the bond between stones that is so essential to dry masonry. To obviate this, architects and builders have resorted to innumerable experiments. Lime mortar has been added to the cement to retard the setting; this undoubtedly does insure a more elastic bond, but as only a small percentage can be added, not over seven or eight per cent., it by no mean corrects the evil. Another expedient has been found among the number of transparent waterproofing mixtures offered, which not only correct the cracks but tend towards rendering the stone impervious. Such mixtures are applied to the exterior surface, and in some instances it is necessary to heat the wall bit by bit before applying the mixture—an expensive process. All this must be remembered in considering an unfurred stone wall. If the wall is furred this precaution is not imperative, for dampness would hardly manifest itself on the inside, and as for the outside, nature will waterproof it in a score of years by filling its pores with dirt and dust which become one in substance with the stone itself. Hence the truth of the ancient argument that a stone building improves with age.



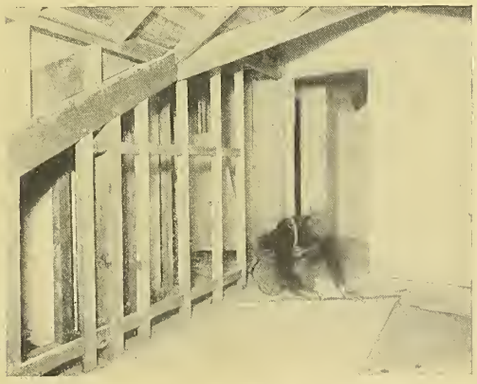
For certain types of rooms brick in suitable artistic patterns forms a pleasing and not too expensive wall finishing

The approximate cost of a stone house would be from thirty-five to forty cents a square foot of exterior surface without inside furring. There are those who are willing to take the risk of plastering directly on the stone; that this is seldom successful is proven by the numerous expedients resorted to afterward to make such a wall impervious.

Brick is a perfectly reliable material. True, it declined in popularity a few years ago, but that was due more to the public having grown tired of the monotonous shapes and colors which manufacturers were then turning out than to any inherent unsatisfactoriness of the material. But since the recent introduction of artistic brick-making, with its varying shapes and beautiful colors and technique, brick is again coming into its own. Like stone, brick walls are subject to sweating and dampness and in the better class of work are similarly furred.

One of the considerations before deciding on a brick house is whether competent brick masons can be found in the locality. In many obscure districts the carpenter is the only intelligent contractor, and except for the perfunctory and inartistic laying of brick for cellar walls and chimneys he has no idea of the picturesque possibilities of the material, and in fact is often unable to interpret the plans. This state of affairs could spoil the best designed brick house. Unless an owner is prepared to build in the modern spirit of brick work he should hesitate—it would be a pity to repeat the commercial aspect of the local factories. Brick in combination with half-timber or stucco in the upper stories offers an admirable chance to lend interest to a material which, in a small inexpensive house, is apt to look stiff and unattractive. In a very large brick dwelling it can be made to look interesting by the variety of motifs introduced; in a small one, where, of necessity, these many motifs are absent, one must look to a variety of material for the interest. By terminating the brick wall at the bottom of the second-story joists, and from there up building in frame, this is accomplished. Care must be taken to protect thoroughly the top of the brick wall, for any moisture filtering down from this point would be most disastrous. Generally speaking, the problems of the brick wall are not unlike those of the stone wall; and in neither case can furring be regarded as the unnecessary precaution of an over-careful architect; not only does it insure dry-







The various sorts of plaster or composition board are a reasonable and efficient substitute for plaster. They may be applied directly to the studding and if battens are used over the joints, successful approximate paneling is realized. They are ready for use and need only painting, but the directions for cutting should be carefully followed



An interesting use of vitrified hollow tile that is particularly suited to small houses of the bungalow type



The exterior of the brick house need not be uninteresting. Variety of design is well shown over this entrance

ness and additional warmth, but it supplies the space required for proper wiring and piping.

No one material has so revolutionized modern construction as concrete. But the small house has been affected less than larger structures, except, perhaps, in the matter of foundations. For heavy sustaining and retaining walls it is cheaper and stronger than stone. Cheaper because unskilled labor can be used in the making. For upper walls, and we are confining ourselves now to residential work, it has not proved a very satisfactory material. By concrete we mean a house the walls of which consist of structural concrete, and not a frame house covered with stucco, as is so often understood. Concrete walls as a final material are heavy, and lack interest, particularly when cast in imitation of rough-hewn rock. Of all the shams in the building trade this is the most inexcusable. The builder in concrete must take every precaution to prevent his wall from becoming water-soaked, for this material is very absorbent if not properly mixed. This mixing process and the selection and proportioning of ingredients must be carefully attended to in order to produce a waterproof substance. Some concrete blocks are of course much more impervious than others, depending entirely on the mixture and ingredients. The top of a concrete wall should never be left flat unless covered with tile or metal either to shed or keep out the moisture. Due to careless workmanship and speedy construction very often the desirable fineness of concrete is not achieved, and in general it is conceded that the use of some waterproofing mixture is desirable to insure against the percolation of moisture.



The house of rough stone, however substantial its exterior may appear, must have very thick walls to insure warmth

Hollow tile is daily becoming more popular. Omitting the several reasons for this and concerning ourselves only with its practical aspect, it may be said that its oft-quoted advantage of presenting a rough surface to which both exterior stucco and interior plaster finish adhere readily must be discounted by the fact that for a hollow tile house also, inside furring is highly desirable. Otherwise the chances of dampness and sweating are too great to risk, as such an accident could mar the interior decorations. Whether furred or not, some approved coat of waterproofing should be applied before the inside plastering is put on. If below ground the tile should be waterproofed both inside and out, and here vitrified tile only should be used, being less porous than the ordinary sort. Several patented interlocking hollow blocks, offering greater resistance to weather and a firmer bond for both wall and cement, are now being manufactured, and as these become more widely used, the need of interior furring will become less imperative. Complete waterproofness will overcome the one great objection to hollow tile, in every other respect a most desirable material for a well ventilated fireproof and soundproof wall. However, in reading hollow tile literature, which frequently dwells insistently on the advantages of its air spaces, it must be remembered that in every residence the window and door area (comprising a large proportion of the total) offers more or less inevitable leakage and draughts which do much to discount the advantages quoted. In hollow tile walls the treatment around door and window openings is most important. It has been customary to use ordinary sized perforated brick in conjunction with the hollow tile around the frame to insure a tight job. There are now being made special window- and door-frame hollow tile blocks, so rabbeted as to receive the frame and hold it firmly in

(*Continued on page* 55)

Ferns That Can Be Grown Successfully Indoors

SOME VARIETIES THAT ARE WELL ADAPTED FOR USE AS HOUSE PLANTS—THEIR REQUIREMENTS AND CULTURAL DIRECTIONS—SIX OF THE BEST FORMS

BY F. F. ROCKWELL

Photographs by Chas. Jones and N. R. Graves

WHILE the majority of cultivated ferns are not adapted to house culture with its many hardships, they are so beautiful that the few which are suitable for that purpose are among the most popular of all plants used for decoration indoors. In some respects they are more desirable than any other plants for adding to the living-rooms that touch of cheeriness which only a green and living thing can give. In the first place they are beautiful from one end of the year to the other—no ups and downs, flowering and barren periods such as many of the house plants have. They keep within bounds, so that even a fine large specimen does not demand too much room; they last with care for years, becoming increasingly beautiful and valuable, instead of growing lanky or lopsided, or "going by" as so many of the other plants do after the vigor of their youth is spent. Ferns are not easily damaged or broken; moreover, and what is one of the greatest points in their favor as house plants, they do not require an abundance of sunlight.



Certain ferns are pleasing table decorations when suitable receptacles are used

It is rather difficult to say in just what points the great beauty of a well-grown fern lies. It attains, of course, the acme of gracefulness of form; in both the fronds themselves and in the shape and arrangement of the individual leaflets, Nature has not produced anything more artistic. The shades of color, too, are most pleasing. And there is a suggestion of freshness and springtime about ferns. But even these things fail to explain altogether why it is that while most people have their preference as far as other flowers are concerned ,everyone admires a well-grown fern.

Ferns may be used in a variety of ways. The large single plant with its graceful recurved or drooping fronds placed on a small stand is perhaps the most common sight. But they have their place along with the plants in the windows, as decorations for the center or dining-tables, and even as graceful climbers—the so-called asparagus ferns being suitable for this purpose.

The types of ferns that can be handled successfully in the house are several; and yet we seldom see more than one or two in the possession of the same person. This is largely due to the fact, I imagine, that generally they are not offered for sale by the retail florist until they have attained a pretty good size, and command a pretty good price—fifty cents to a dollar and a half—so that one does not feel like indulging in a very large assortment. It is possible, however, to get them in the smaller sizes, and with proper conditions for keeping them—without which it is folly to attempt to have them at all—they can be easily grown on to larger size, with no further expense than an occasional flower pot of a larger size.

The most widely known type of fern is without doubt that represented by the Boston fern and its many relations. The Boston fern, introduced not so many years ago, is a form of the old sword fern (*Nephrolepis exaltata*), with longer and more graceful fronds; but while its hardiness and general beauty won it at once a place of universal popularity, newer forms, in the last few years, have largely replaced it. One of the hardiest of these is the dwarf Boston or Scott fern (*N. Scottii*), which resembles the Boston closely except that it is smaller, both in size and in the fronds, and of a more compact and bushy growth. This fern is also distinctive for the beautiful light green color of its fronds. Still smaller than *Scottii,* and for that reason more valuable as a fern for centerpieces, pans or use with other plants, is the new Miniature



Nephrolepis Whitmani is a very desirable ostrich plume type



The adiantums, or maidenhair ferns, are to be had in great variety



Among the attractive drooping sorts is *Adiantum Farleyense*



Cristata, one of the many varietal forms of *Pteris*, is suitable for made-up dishes



The Boston ferns are forms of the old sword type. This is *N. cardata*



P. Cretica albo-lineata has a whitish central band extremely decorative

Scott fern (*N. Giatrasii*). A new type of the Boston, which retains its beautiful drooping habit, and having the additional charm of undulated pinnæ, giving a general wavy effect, is found in President Roosevelt.

Even more beautiful than these ferns are the crested sorts of the sword fern. *Elegantissima* was one of the first of these, and proved very popular; but one great objection was that it showed a tendency to revert to the Boston type, and although this habit has been largely overcome in the improved form, still Whitman's is now generally considered the most desirable of the Ostrich Plume ferns for use in the house, where long, graceful fronds are desired. It is truly a most beautiful fern, while the sword-like appearance of the fronds is retained, and they rise from a densely crested mass of shorter growths, making the effect of the whole both novel and charming. *Scholzeli*, the plumed Scott fern, stands in the same relation to the *Whitmani* as the Scott does to the Boston—shorter fronds, more dense and compact growth; it is the ideal plumed small fern. The most delicate of all the *Nephrolepis* class is the Lace fern (*N. Amerpholii*). It is very distinct from the other sorts, and well worth a place in every collection. There are two other markedly different varieties. One of these is the *Piersonii*, an extra fine sort, which may be placed as halfway between the Boston and the plumed type. Some idea of the merit of this fern may be gained from the fact that it was awarded a gold medal by the Society of American Florists. The other is the Fluffy Ruffles fern (*N. superbissima*). This is so odd and distinct as to be really in a class by itself, the fronds being very irregular and dense in growth, and the color an extra deep green. Neither of these, however, will stand as unfavorable conditions as most of the others mentioned.



Various styles of copper receptacles look well with Boston ferns

One of the beautiful but delicate adiantums, perhaps the one most frequently seen, is the *A. Farleyense*. But outside of the greenhouse or florist's it is not to be relied on. None of the maidenhairs, in fact, is as suited to house culture as the *Nephrolepis* type. There are, however, two splendid varieties that with reasonable care will do well and repay amply the attention given them. They are *Croweanum*, with fronds much firmer than those of its type, and the hardiest for growing in the house; and a splendid new sort called the Glory fern (Glory of Mordrecht), which is almost identical with *Farleyense* in appearance, but much more easily grown. As yet this variety is rather high in price, four-inch pots costing one dollar each, but it will undoubtedly become cheaper and prove very popular.





The maidenhair family of ferns offers great diversity of form. At the left is one of the coarser varieties, while at the right is a common lace-like variety

The name given the *Pteris* ferns is descriptive of only part of them, as they vary greatly. They are commonly used in made-up dishes or with other plants, but many of them make fine single plants as well. *Wilsonii* is a popular sort, making a compact plant of clear light green foliage, uniquely tufted. *Cretica* is dark green, or green with white lines, according to the variety. Victoria is the best of the variegated sorts. A very rare sort is *Childsii*, with fronds of large size, and the leaflets deeply cut and also undulated.

A pan of spider ferns, with a small palm, such as *Cocos Weddelliana*, or a small growing fern such as *Giatrasii* in the center,

(*Continued on page* 57)

What You Should Know About Plumbing

THE ESSENTIAL CONSIDERATIONS FOR SANITARY EQUIPMENT—VENTS, DRAINS AND TRAPS—WHERE TO LOOK FOR TROUBLE AND HOW TO TEST NEW PLUMBING—THE ADVANTAGE OF DECIDING ON FIXTURES BEFORE THE HOUSE IS COMPLETED

BY MARK DEAN

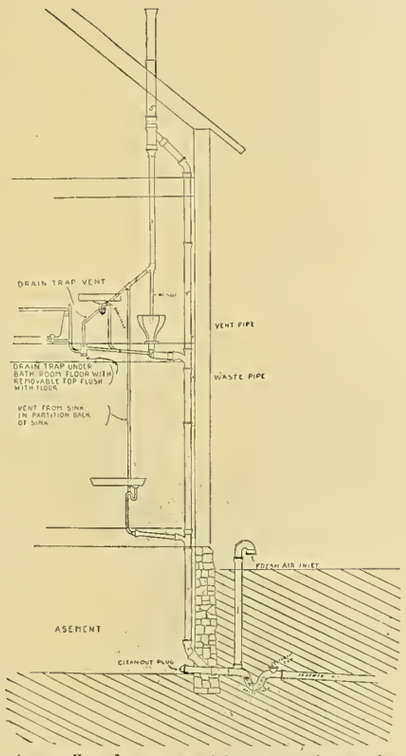
Photographs by Mary H. Northend and Ph. B. Wallace

SO gradually has plumbing become a permanently large part of our economics, that few people realize the important part it plays in our civilization.

If the plumbing system were removed from any large city, its absence would quickly cause an intolerable pestilence; and as the plumbing of any house forms a complete unit, the collection of which units forms the city system, it would seem unnecessary to caution builders further as to the importance of giving this subject careful attention.

A household plumbing system consists of one or more stationary fixtures, such as a basin, bath-tub, toilet, sink, laundry tub, etc., to which water is automatically supplied and from which waste is automatically removed upon the opening of a bib, the pulling of a plug, or some such simple operation.

The piping may be divided into three classes; *i. e.* supply, waste and vent pipes. The supply pipes are quite small, seldom exceeding one inch in diameter; and are therefore easily installed, and may conveniently be placed between floors and partitions. If properly installed, which includes the necessary protection against freezing, the supply pipes seldom give trouble. The waste piping is much larger then the supply piping, the main waste pipe of an ordinary house being four inches internal diameter; and when there is a water closet connected with it, it should never be smaller than four-inch pipe. The vent piping is also large and is connected directly to the waste piping, one of the main vents being a full size continuation of the main waste pipe. The waste piping, unlike the supply piping, can have no valves or other fixtures which would stop the flow of waste. And yet, because of the filth which gathers on its inner walls, there must be some sort of seal which will prevent gases from this piping escaping into the rooms of the house. To this end, a water filled bend in the pipe, called a trap is placed close to each fixture. A form of such trap is seen in nickel beneath the basin in the center illustration on page 38. This permits a free passage of waste and at the same time keeps all air in the piping from escaping into the room by retaining water in the trap as shown in sectional view on page 50. This trap should have a vent at its crown as indicated by the dotted lines, otherwise it is apt to syphon the water out, which is equivalent to an open invitation to microbes.



A ventilated system with an opening at the roof, connecting with the bathroom fixtures and joined by a vent which is an extension of the main waste pipe. This arrangement of the traps and fresh air inlet insures proper air circulation

The writer's first lesson in syphonage was given many years ago by his father who took a crooked green onion stem, cut off both ends, filled it with water, and with a finger over each end, placed it over the side of a tub full of water as shown on page 51. When his fingers were removed, the water flowed from the tub through the onion stem until with his knife, he made a small puncture in the stem (at the point marked "A" in the diagram). The tendency of the water in each leg was to flow down; but for each to have flowed down would have created a vacuum within the onion stem, and the weight of the water was not sufficient to do this. This pressure was exerted by the greater weight of water in the outer leg of the stem and by as much of the water of the inner leg as was above the water level of the tub. Consequently the inner leg was overbalanced, and the water flowed from the tub. But when a puncture was made in the stem, the tendency of the pressures was no longer to create a vacuum but to draw in air, and so the stem was emptied and the syphonage ceased.

With these facts in mind it will be easier to consider the two main classes of plumbing systems and their advantages.

These are the non-ventilated and ventilated systems. The former is not universally regarded as desirable. It consists merely of a main waste pipe that branches from the fixtures through traps placed close to the fixtures. It is dangerous; first, because the air being confined and having no opportunity to circulate in



A modern bathroom showing how the visible piping is restricted to but a few lengths of pipe, and this made attractive with nickel fittings and beautiful finish

the piping becomes poisonously foul, and further as there are no air inlets to break the suction caused by the flowing water, the water is often syphoned out of the traps, thus giving an escape of poisonous air into the living-rooms.

The ventilated system is a development of this same system with the exception that the main drain pipe is extended through the roof and from the crown of each trap (such as already explained) there is a vent pipe which connects with one main common vent at least two feet above the highest fixture. Sometimes it is more convenient to carry these pipes separately through the roof. Such a system permits air to flow through the piping carrying the foul air out into the purifying sunlight.

Such a system as outlined is generally accepted with various modifications. Sometimes it is spoken of as the revent system, in which case the ventilating pipes are distinct from the drainage pipe, and in the ground outside the house where the soil pipe joins the tile pipe there is an additional trap with a fresh air inlet. This running trap outside the house prevents all gas from the sewer to work through at that point and permits a flow of fresh air instead of foul throughout the system; obviously an advantage. The extra vent pipe carrying air from the roof to the traps insures an even air pressure and makes it impossible for the water seal in the trap to be broken and prevents the escape of gases. Note the diagram on page 37. Other developments of this system have special fittings or pipe curves for which advantage is claimed. One in particular makes especial point of a design so arranged that the working of one fixture will not interfere with the drainage from another. Besides this, various arrangements are made to relieve the pipes automatically of the accumulation of rust. With these points in mind the main requirements of a sanitary plumbing system will be apparent.

The working of the trap, so essential to a ventilated system is made clear in the diagram. This shows that vent piping not only preserves the water seal in each trap, but also maintains a circulation of fresh air throughout the system by drawing air in through the fresh air inlet on the house side of the house trap, passing it through all the piping and finally out through the top of the vent pipe above the roof.

The house trap may be located just inside the cellar wall in which event the fresh air inlet is extended out through the cellar wall above the ground level.

A little care, at the time of installation, to provide for unequal settling between house and surrounding earth will often prevent breaking the main soil pipe together with its attendant troubles and expense. If the pipe is cemented solid where it comes through the wall a space of an inch or two all around it should be provided for a distance of six or eight feet from the house, or if it is packed solid in the earth then there should be a space between the pipe and the surrounding wall.



It is difficult to clean the dirt and dust accumulating beneath this shower receptor. It should be flush with the floor



A good type of basin trap. The bend remains full of water which prevents gas from returning into the room



Such unsightly pipe arrangements as those connecting this basin are the result of improper planning

With respect to all systems, I might say that, excepting brass, copper and other metals too expensive for consideration, cast iron is the best metal to use for large and lead for small waste and vent piping, because of their non-corrosive qualities. The joint in cast iron waste and vent pipe has always been its vulnerable point, but now that universal pipe does away with this objection by making a perfect joint, iron to iron, without the use of packing of any kind, it provides a continuously perfect line of piping, adaptable to all waste, vent and revent systems of plumbing piping.

Another precaution against trouble is a test of one's system. After the roughing in has been completed the fixture openings should all be temporarily stopped and the entire system subjected to at least ten pounds water pressure with the test gauge at the highest point in the system, and each joint carefully examined while under this pressure, especially the hidden sides of those in corners and out-of-the-way places.

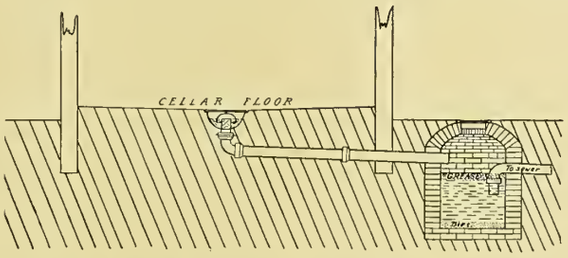
The items which may, and sometimes do, change a perfectly sanitary installation into a dangerous one, are: the pipe, joints, traps and settling of the building. As already stated, cast iron is the best available material for the pipe. The caulked lead joint is in general use, and therefore demands attention. Of all joints it is most subject to imperfections, because its perfection depends upon the integrity of the individual workman as well as the materials involved. The entire face of each leaded joint must be thoroughly caulked to make it tight. The unscrupulous or indifferent workman will sometimes leave the most unobservable part of the joint poorly caulked or even untouched. Owing to the unequal expansion of lead and iron, and to the fact that lead after expanding is not elastic enough to resume its original shape, the leaded joint will often become leaky after a change of seasons although tight when installed.

All traps are liable to stoppage, and should be provided with cleanout plugs. Immediately beyond the trap, the size of the piping should increase, so that whatever passes the trap will have little chance to clog the pipe. If the traps are concealed, some convenient method of access to the cleanout should be provided. Besides this the horizontal part of each line of waste pipes should be provided with a brass clean out plug at the foot of each riser.

The concealed water supply piping may be of lead, galvanized iron or brass. Lead is used very extensively; for ordinary houses, brass is considered too expensive for this part of the work; and galvanized iron fills all requirements, and is gradually becoming more popular. All supply piping, and traps in waste piping, should when possible, be kept in inside partitions; and whenever placed in outside walls, they should be thoroughly protected from frost. All concealed hot water piping should be covered to preserve the heat. Practically all the work we have mentioned is hidden from sight after the building is completed, but like the unseen wheels of a watch, upon it depend the real efficiency, durability and perfect sanitation of the whole system.

We now come to the fixtures, which are largely a matter of price, and in this department you may expend as much as you like. It is a genuine pleasure to note the great number of improvements in all kinds of fixtures; improvements which save labor, beautify the home and count for health. Hiding the pipe, traps and fixtures supports, by boxing them in, has been discontinued, because the exposed work, permitting sunlight and air to circulate freely about, is much more sanitary. Moreover, the quantity of exposed piping and traps has been reduced to a minimum and beautified to such an extent that instead of being eye-sores, they have become ornaments.

Practically all modern plumbing fixtures are sanitary, the difference in fixtures being in durability, artistic design, and labor saving arrangements. But under these classifications there is a vast difference. Vitrified clay and enameled cast iron make the best lavatories, tubs, sinks, etc., and for various fixtures or parts of fixtures, onyx, marble, slate, soapstone and plain or galvanized cast iron or steel are used.



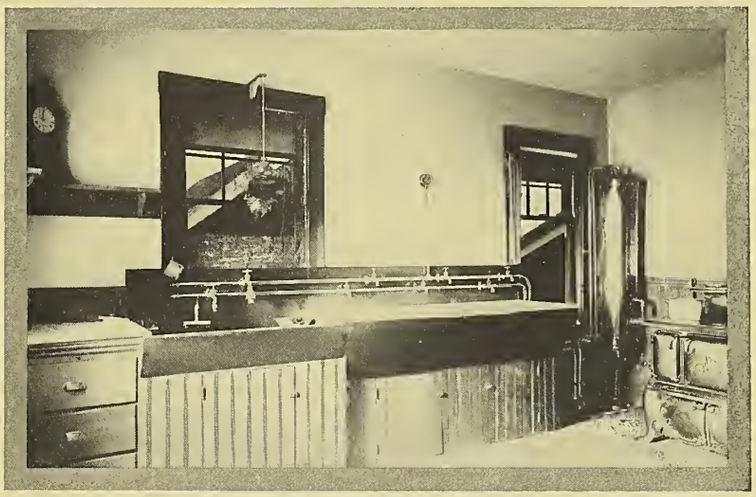
A cellar or garage drain should connect with a grease trap. The bell trap keeps the pipe clear automatically. If possible, the kitchen waste should be connected with the grease trap



The most approved kitchen sinks have the body, back and drain shelf all in one piece. This is a desirable fixture, very simple in its drainage and faucet equipment

There is also a great difference in the fixtures made from any one of these materials. The great advantage of vitrified and enameled ware is that it is non-porous and therefore non-absorbing, which prevents it from becoming foul.

Many people make the customary error of waiting until the building is well advanced before deciding what fixtures are to be used, only to learn when it is too late that some specially desirable fixture cannot be used for lack of room, or that a heavy porcelain tub cannot be used because the floor timbers are insufficient. If the matter had been taken up at the proper time a little more space between window and partition or a slight variation in the dimensions of the room or timbers might have been made without additional expense. Moreover the location of supply, waste and vent piping cannot easily be changed after it has been roughed in and since different fixtures require different locations for these openings, the fixtures should always be selected before the work has been started.



Hot water boilers should be supplied with circulation pipes, which makes it possible to draw hot water at any time. Hot water pipes should be carefully insulated

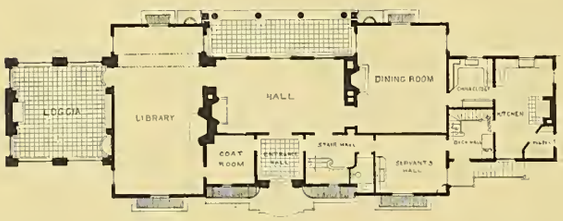
The combination of the elevated flush tank and the porcelain water closet bowl sealed the doom of 'closed work' and gave to the world the then most sanitary appliance of its kind. Although still extensively used the elevated tank has two close competitors for popularity, the "low-down tank" and the "flushometer," the low-down tank being more frequently seen.

Present methods of flushing are good, but nevertheless sources of trouble. Unintelligent installation and delicate parts cause the flushometer to get out of order. One of its greatest causes for working unsatisfactorily is an insufficient water supply. It should be supplied by a large pipe. The flush valve in both high and low-down tank will, after some usage, easily get out of order which in turn causes the ball cock supply valves of these tanks to become leaky and then both must be repaired. Continuous effort to overcome these difficulties has been rewarded by an invention which instead of the ordinary flush valve has a solid one-piece syphon and a small injector which lifts the water over the syphon so rapidly that it is possible to fill a flush pipe of any desired size, thereby insuring a perfect wash in the closet. This does away with the valve and the possibility of any leakage through the syphon.

(*Continued on page 49.*)



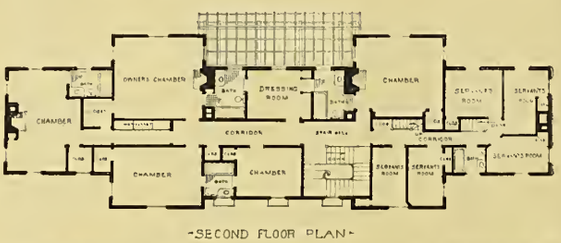
The claim that a perfectly symmetrical house is cold and stiff is not substantiated by fact, since the placing of the house in its site has much to do with its impression of attractiveness. Seen from the driveway this residence appears inviting



The plans show an unusual hall arrangement. The main hall serves as a living-room

A HOUSE AT MT. KISCO, NEW YORK

Biglow & Wadsworth architects



SECOND FLOOR PLAN

One advantage of a symmetrical plan is shown in the walls not being broken by juts or angles



A circular turnaround inclosed with a wall is at the east front of the house. At the left the wall forms a basis for a pergola. At the extreme right is seen a lattice arrangement screening the kitchen entrance. Certain courses of the shingles are emphasized, giving attractive lines



From the extreme end of the lower garden one looks toward the loggia and the upper garden with its pergola-covered walk. This view shows the disposition of the most important rooms to take advantage of the attractive view to the west



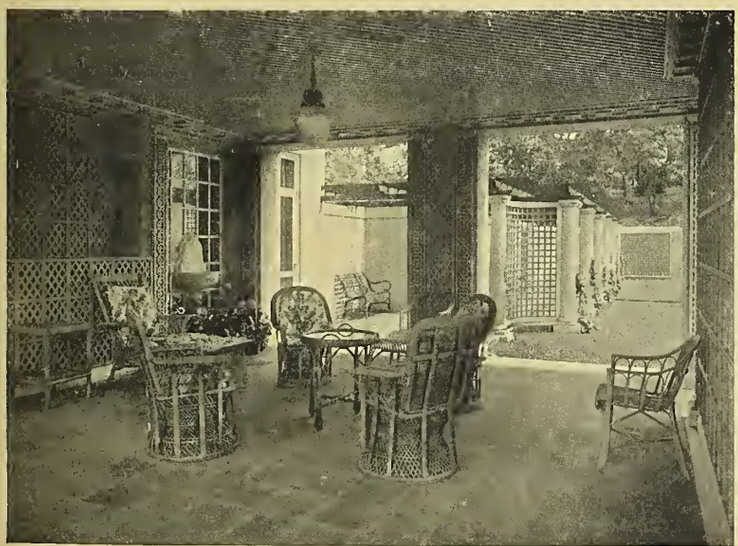
On the west front a paved terrace covered with a pergola and awnings serves as an outdoor addition to the main living-room



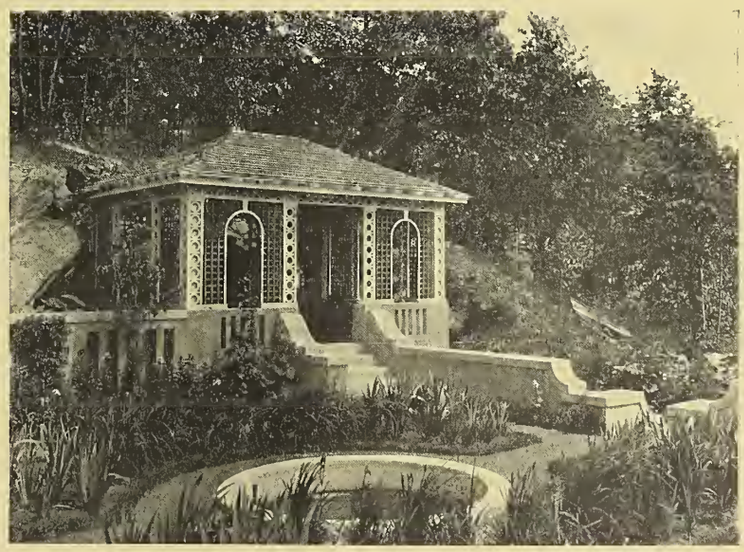
The main hall or living-room is paneled with white woodwork and opens with wide French doors on a terrace



The library shows simple but attractive furnishings in which chintzes and warm-toned rugs lend color and play an important part



The loggia with its tiled floor and marble finish makes a very desirable room for warm weather. Lattice as a wall covering is well shown



Successful planning is evidenced in the smallest details. This summer house is in good keeping with the complete scheme for the place



Inside the House

Timely Suggestions and Answers to Correspondents



The Editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope

An After-Dinner Coffee Stand

A RATHER attractive arrangement for the serving of after-dinner coffee in the drawing-room is a combination of trays forming a little table or stand that serves to hold all of the necessary articles and may be easily moved about. Like so many other things in this day of apartments and small quarters generally, it is designed with a view to compactness and the occupying of the least possible amount of space. The two little shelves are about twenty inches long and only about eight inches wide, curving slightly in the front, so that they are rather wider at the center than at the ends.

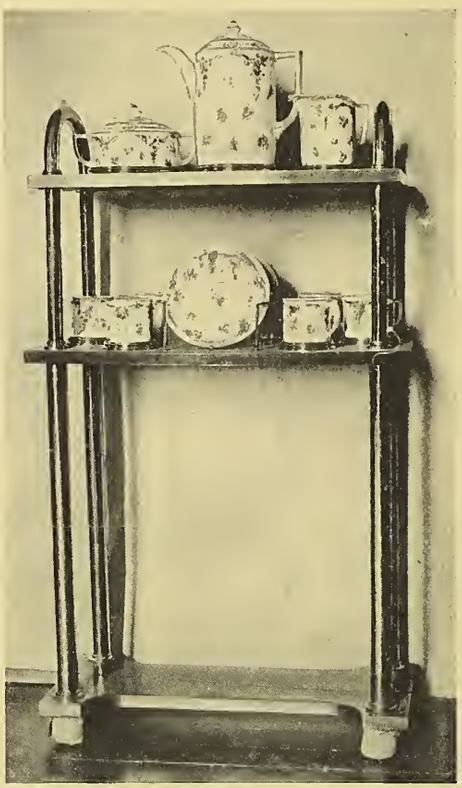
The stand is of highly polished wood, and the substantial curved handles at either end, a continuation of the supports, are of brass. The coffee service, of prettily decorated French china, is sufficient for six persons, and all of the pieces with the exception of the saucers, which are in a rack, are so shaped so that they rest securely in the stationary rings placed for them, making it impossible for them to slide off when the stand is moved about.

Similar stands may be had with the cups and saucers on the lower shelf; but in place of the coffee pot and other pieces on the upper shelf there is a smoking and liquor set which includes the decanter, glasses, ash receivers and a spirit lamp.

Three Suggestions for Interior Plant Decoration

TAKE the larger half of a cocoanut shell, pierce three holes around the edge for the entrance of small chains or wires, and use as a hanging basket; or, if preferred, rebend to the required shape a plate or plaque standard, as a table support for the cocoanut shell. Then saturate a sponge which, when expanded with water, will entirely fill the shell. In the interstices of the sponge place rice, filling the sponge rather thickly with the seed. And in a very short time the most interesting green, tufted growth will entirely cover the moistened sponge and later will fall over the shell. This device makes a most novel table decoration, especially as it lends itself to the further insertion of small delicate flowers for any special or hasty occasion.

Another decorative novelty is the use of a long, slender sweet potato placed half way in a tall, thin olive bottle, or any bottle open-mouthed enough to hold the potato without pressure. This is really an artistic method of beautifying a dining-room, for within a week or two, roots will



An after-dinner coffee stand that is adequate but occupies little space

begin to fill the lower part of the bottle, while a long, decorative vine will grow from the upper end of the potato. And although this vine is not under close examination particularly fine, nevertheless the effect is decidedly acceptable. For if the bottle is fastened at the top of a window, the vine will soon fall over the curtains, and later, sweep to the floor.

A third suggestion is in utilizing the seeds of grape fruit, which can be done after the fruit has been prepared for eating. Then, selecting the choicest of the seeds, soak in water for fifteen or twenty minutes and plant in the rich soil of a fern dish. Plant at least two dozen seeds. Then keep the dish in the sun and nurture as any plant. In a few weeks the dish will be green with many little shoots, all of a uniform size, about an inch apart, which later, without transplanting or thinning out will grow to any height required. But as soon as the plants are a couple of inches high the dish can be placed in its standard and used as a table decoration. The growth is not only distinctively tropical and mystifying to one's friends, but the plants emit a faint sweet odor. So if the seeds are planted in the early fall, one can have the advantage of an ornamentation through the early winter months. Or if planted in mid-winter it is not too late for the seeds to be up in time for a choice Easter gift. And if reserved for later use, such as a table decoration after the ferns of the house have been removed to the veranda, the plants will keep green and healthy through the summer.

Try some of these schemes this winter. They are all simple and easily accomplished, and their effects are really surprisingly effective under the circumstances.

A Rain Shield for the Window

A MORE or less vexing problem for every householder is that of keeping the rain out of the windows and at the same time providing for a proper amount of ventilation. Particularly is this in evidence in a sleeping room where good ventilation is an absolute necessity, and where there may be windows facing in but one direction, so that it is a choice between no air and a drenched window sill and floor.

One of the simplest ways of overcoming this difficulty is by the use of a wide board placed in such a position in the window that the rain is directed away from the opening and not allowed to beat in. The board should be about two and

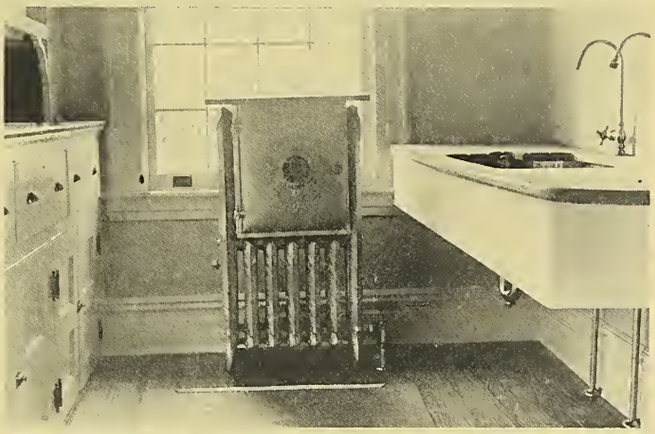
one-half feet wide, and long enough to fit in the window frame, leaving as little space as possible on either side. While a single board of the required shape and size is preferable, the window shield can be made of narrow pieces put together with cross strips underneath.

The shield is attached to the window frame by means of hooks and screw eyes, the hooks, which should be substantial and quite large enough to slip on easily, being screwed into the window frame outside the sash. A screw eye is put into each side of the board as near the extreme outer edge as is practical, and only about an inch from the exact center, so that when it is hooked into place it hangs in the window at a slanting angle, the lower edge of the board being outside the window and the upper edge extending well into the room.

Two sets of hooks, one at about six inches, the other twelve or fifteen from the lower edge of the sill should be put in, as this admits of two different heights for the window opening. When the board is in position the window is pulled down until the lower edge of the sash touches it, and as the board extends downward and reaches well beyond the outside sill, it is impossible for the rain to beat into the opening, while the air is freely admitted. Another scheme for preventing the rain from beating under the sash of a closed window is one that is being used in a number of new houses. This consists of a weather strip of tin about an inch high, that is placed along the outside sill and fits close to the sash of the window, forming a regular groove into which it is lowered. When the window is closed this weather strip protects the crack thoroughly and keeps the rain or snow from beating in, as well as making it perfectly airtight.

Christmas Decorations

HOLLY, while it is the Christmas decoration, is most difficult to arrange gracefully on a table because of the stiffness of its leaves, and the ease with which they fall off its branches. Therefore it is more used in the general house decoration. Especially pretty branches may be hung along the stair balustrade if wreaths are not used for that purpose. It is also much used in window decoration and for the fireplace if you are so fortunate as to possess one. Do not lament because you cannot afford roses, for few roses combine prettily with the Christmas greens. The scarlet carnation is better, but the red poinsettia is best of all. Gather plenty of ground pine, laurel, hemlock, smilax, ferns, if you can get them, of all varieties, cedar and pine for their fragrance and don't forget the pigeon berry. This berry has taken the place of the holly to a great extent. It grows on a stem without any leaves, and these combined with fern or laurel make as pretty decoration as anything that could be suggested. Fill the cases full of fern or little hemlock branches with the branches of the pigeon berry standing up in the middle. If holly is not plentiful, or is not to be had at all, get hemlock with a quantity of small cones on it. This makes a delightful decoration. It may be brightened by interspersing with bits of holly or pigeon berry. Branches of pine with the cones on not only furnish decoration but also give to the home that delicious odor without which no Christmas is Christmas. The cones may be gilded. A pretty centerpiece for the table may be made by taking a small round basket (if it has a handle remove it) and place the basket on the table upside down. This is covered with moss and holly, spruce and pigeon berries placed plentifully over its surface. If you cannot get smilax, use the ground pine to run from this centerpiece to the various places and corners of the table.



This compartment radiator in the butler's pantry is large enough to be thoroughly useful for its double heating purpose



A large mirror set in the bathroom wall and flanked by small windows is really serviceable. Below the windows are closets for various toilet articles

Convenient Bathroom Fittings

TO take the place of the small cabinet fitted with shelves and a mirror in the door, that occupies a prominent position in most bathrooms, one entire end of a bathroom in a California bungalow has been filled in with small cupboards and drawers and a mirror. This supplies all of the features of the wall cabinet on an extensive scale, furnishes space for towels and other accessories, and makes as complete and attractive a bathroom as one would come across in a long day's journey.

Instead of the small mirror over the washstand, in which, if one is just the right height, it is possible to see one's whole face at the same time, there is a full-length mirror set in the wall and flanked on either side by little square windows. They are quite large enough to admit all of the light necessary and are so high that the important question of whether the curtains are drawn or not does not have to be on one's mind continually. Below the windows are small closets, their tops forming shelves that are just the right height for holding the mirror and other shaving paraphernalia. The upper parts of the closets are arranged to hold bottles, tooth brushes and other toilet articles, and are so spacious that everything necessary for toilet use can be kept in them, thus doing away with dust collecting shelves on the bathroom wall, not to mention the various articles that are apt to accumulate on the washstand.

In the lower part of one side are three drawers for towels, while in the other is a single compartment deep enough to accommodate the larger and more bulky bath towels. Between the closets and in front of the mirror is a box-like compartment with a hinged top where all the necessary articles for cleaning and shining shoes are kept. Electric brackets at either side of the mirror give all the advantages of a dressing table as far as lighting is concerned, so that there is no one-sided illumination as when the bathroom has but a single light. Complete and ingenious as this arrangement is, it occu-

(*Continued on page 63.*)



Garden Suggestions and Queries



Conducted by
F. F. Rockwell

The Editor will be glad to answer subscribers' queries pertaining to individual problems connected with the gardens and grounds. When a direct personal reply is desired please enclose a self-addressed stamped envelope

January

OF course you are going to have a garden this year. That point has been passed where there is much choice in the matter—the cost of living has increased sixty-two per cent. during the last decade. What are you doing to make up the difference? If you are so fortunate as to possess a bit of fairly good ground, you can do a good deal to solve your personal problem, whether you are the money-earner or the money-spender for your household. But it can't be done in a haphazard, careless way; you should give it the same thought and attention that you would any other "side line" which you could see would increase your income to a very worthwhile extent. New methods and systems in gardening have made possible a greatly increased production from the small plot of ground, and even if you are not a garden crank, you should look into them from the point of view of economy. So let one of your resolutions for the coming year be the making of a 100 per cent garden—one that is capable of putting on your table all that the garden space can produce.

Planning for This Year's Garden

REMEMBER that simply making up your mind that you are going to do things that will make the neighbors sit up and take notice, will get you nowhere; that if you are going to score 100 points you must start now—long before a fork or plow can be put into the soil—and let no opportunity pass to make certain of the final results. For a starter, suppose you send for three or four good seed catalogues—not that it would necessarily be advisable to split your order up into that many parts, but to be able to compare notes on varieties. Secondly, determine just as accurately as possible the size of your garden-to-be, and the supply of the various vegetables your family is likely to want. You should have kept a record of last year's operations, but even if you didn't, you probably remember if there were more beans than you possibly could use, early cabbage that had to be fed to the chickens, and a shortage of early beets or cauliflowers, and will thus have some basis for the year's planning. It is not a bit too soon now to see about engaging a few loads of manure to be delivered in March, and to begin sawing up boxes to make into flats, and overhaul your cold-frame or hotbed sashes, in preparation for starting your early flower and vegetable plants. Don't be in too much of a rush to order your seeds; you should know where every packet and ounce is going,



An interesting example of how ivy may be led from one pot to another

have it down in black and white on your plan, before you buy. But it will require several hours' careful study for you to determine just what varieties you want, and it is a good plan to have that definitely settled before you determine the amount of each, that there may be no shortage and no waste.

The vegetable garden, however essential it is both for pleasure and for profit, should not receive all your attention in planning for the new year. What are you going to do for the grounds? With ten minutes' thought you can probably put down a dozen things you'd like to do, and in fact have been intending to do for several years. But many things, including perhaps that sixty-two per cent. increase in the cost of living, have prevented you. Perhaps part of the trouble was also that you never settled on any one definite thing. This year, this day, decide definitely on some one thing you will plant, or feature you will carry out during the coming year—if it is only the planting of some new rambler rose, such as Tausendschön (Thousand Beauties) which you have admired the past summer; or the setting out of a lot of sunflowers to screen the fence at the back of the yard. The great secret of getting these things done is only to decide definitely what you will do. Get it down on paper but don't stop there; get your order in for spring delivery of whatever it may be you want, and then the chances are you will get it done.

Small Greenhouse Work

JANUARY is one of the most important months for work under glass. If they have not already been planted, start cucumbers and tomatoes now for early fruiting indoors; a few plants of each will supply the home table with these delicious vegetables. Davis Perfect and Vickery's Forcing are both excellent cucumbers, and for tomatoes you cannot do better than Comet, for both quality and quantity. If you are running the house at a low temperature, say 45° at night, for lettuce and radishes, construct a small frame on one of the benches over some of the heating pipes. It need not be expensive; a good one was made out of some old windows, and the bench boards were spread half an inch or so apart and covered with moss, in which the pots were placed, so that the heat could come up through, and moisture might be retained at the same time. The tomatoes should be



Tomatoes for early fruiting indoors may be started under glass in January

started in the usual way, transplanted twice and then potted off into small pots, shifting to 3″ and then to 4″, if possible before placing in the benches or boxes (made about 16 x 20 x 8) in which they are to fruit. The cucumbers may be put into 4″ pots, using five or six seeds and a very light rich soil, thinning to two plants after they are well started.

Lettuce, beets and cauliflower for setting out in frames should also be started now, and brought to as sturdy a size as possible before their shift from heat. The other seeds for vegetable plants to go out into the open, it is a bit early for, but I always like to start a few even as early as January, to be sure they are all right, and to have a few extra big early plants. Any potted plants from which you expect to propagate should be started into active growth now, by giving more water and heat and, if required, re-potting. The resultant new growth, when it has matured sufficiently to "snap" on being bent, makes ideal material for cuttings, and will root readily in medium coarse sand, kept moist and supplied with bottom heat by placing the cutting box on some of the return heating pipes. They may be kept in the shade for a few days but after that should receive plenty of light.

Many of the perennial flowers bloom first season from seed if started early, and they should be put in about this time. Use very finely sifted light soil, water thoroughly the day before sowing the seed, just barely cover it from sight if it is fine, as most of these flower seeds are, and transplant as soon as they are large enough to handle; nothing is gained by waiting, and they are much more likely to be injured by "damping off."

Vines for Window Decoration

VINES growing gracefully about a window inside of the house create a decorative effect that cannot be excelled by any other arrangement of plants. Examples are common where feeble attempts are made to effect a window decoration of vines, but it is the exception to find an instance where the success has been such that it will attract more than passing notice. This is not because of the plants themselves, but rather as a result of the improper way in which they were treated in the preparatory stage and then the lack of subsequent care after they had established themselves.

Vines can be grown in the house, but the one best adapted for such use is the English ivy. This plant can be made to do wonders under house culture, and not only to adorn the windows, but to send its runners entirely around the room, if so desired.

There is one thing absolutely necessary, however, to get these results, and that is a window where there is an abundance of sunlight. It is the warmth of the sun during the first six months on the roots of a newly potted plant upon which depends the success or failure of the plant's growth. Another thing to be considered is the kind of plant that is used for the purpose, whether it is pot-bound, newly potted or growing in too large a pot.

The most desirable plant to start with



Ivy is well adapted to training about windows, giving a very decorative effect

is one that has been growing in the pot for some time and has become well rooted, almost pot-bound; but if this is not possible to get, a number of small plants packed closely into a large pot, say eight inches, will serve almost as well, though perhaps a little slower in producing results. If there should be an ivy vine growing on a house within reach of your window, lead a number of streamers into the room, and treat them as follows.

The idea is to keep these vines growing in the room while getting nourishment from the roots in the ground outside, but at the same time establishing roots for themselves in pots, so that in time they can be separated from the parent vine without experiencing any shock. To do this, take a six-inch pot and enlarge the opening in the bottom so that the vines may be passed through it without tearing the leaves. Bare of leaves the vines nearest the pot for a distance of about three feet. Make two or three circles of this bared space and tie together. These are then to be pulled back into the pot and loam packed about them. Place the pot where the sun will fall upon it, and if this is done in the very early summer separation can be made in the fall. The same treatment can apply to an old plant that has been grown in a pot, using, however, a number of thumb pots to get the same results. This is an interesting experiment, and always affords an endless amount of pleasure to those trying it.

A small shelf may be necessary to support the pot, yet this is not absolutely necessary, for two brass hooks, one at the top of the pot and the other at the bottom, will hold it rigidly in place. In this case, watering should be done lightly and frequently and a cork can be placed in the hole in the bottom to prevent the water from leaking through onto the floor.

Another thing to be watched is to see that the plant has not become so pot-bound that its growth will be injured from some unforeseen cause. A small plant must not be allowed to dry up, while a large plant should not suffer from the same cause. In shifting from the smaller pot to the larger, don't disturb the roots. Remove the pot and put the plant in the larger sized receptacle and pack the dirt hard about it.

Once established, an ivy can be placed in almost any part of the room and can be made to grow for years by a little fertilizing and the renewal of the top-soil once a year.

Insuring Good Fruit

WHILE little can be done out of doors at this time in the vegetable or flower garden, you may take advantage of warm days to prune small fruits and spray apples, pears and plums for scale—San José scale, that most insidious and most effective enemy of good fruit. Currants and gooseberries should be pruned sufficiently to keep the bushes in open form, as a precaution against mildew as well

(*Continued on page 64.*)



Now is the time to start cauliflower plants for setting out in frames

EDITORIAL

INFORMATION FOR THE LAYMAN

THERE is no apology needed for packing a magazine like HOUSE & GARDEN full of the most definite instruction, but since the topic is the subject of so much discussion it is worth while here to offer an explanation. Since there are a few who would describe the information about the more or less dull processes of construction as a somewhat unpalatable dose, we may be able to give the directions for taking in order that it may seem less unpleasant medicine, become fully digested without difficulty and perform its office efficiently.

There are, however, many who consider house building a delight, a different pleasure from its attendant one of making the home. We have always noticed that such prospective owners, and they are in the majority, are hungry for all the information obtainable. We have attempted this month to provide it.

That popularized architectural knowledge is harmful, is but little true. If a few isolated facts and pictures constituted the so-called "knowledge" perhaps the statement might go unchallenged, but no one but a reactionary would inveigh against the propaganda that supplied vital essentials and an explanation of principles. The automobile dealer goes at great length to explain the technical details of his product—and they are of an abstruse nature—to the layman. It is often on points of mechanical superiority that the automobile is sold rather than on the grace of line and trimmings. It is just as important that the prospective owner know the working parts of his house. They are often its selling points, too, and they certainly are the factors which go toward the health and happiness of those living within it.

Mr. Jackson in showing how the architect works, refutes the opinion sometimes given that architects would prefer clients unfamiliar with building. Anything which goes toward clarifying and crystalizing the client's ideas is saving time for him. What is more, and this is true of all knowledge getting, the further we proceed the more we are made cognizant of the limitations of our knowledge. The man or woman—it is more often the woman —who has read up and studied and clipped from magazines and catalogues is not apt to insist on a Spanish Mission house on the rocky stretch of Maine coast which she owns, nor is she apt to place stumbling blocks in the way of the architect's esthetic considerations. The architect is an interpreter both of his clients tastes and needs, and of the requirements of the situation. Whatever facilitates his gaining knowledge of his client's demands and peculiarities, works for the success of his design and enables him to produce, not only a work of art, but a building efficient as a home. Then for your good and the architect's good, but especially for the fun it gives in planning, read.

MAPPING OUT A CAMPAIGN

A CORRESPONDENT of this magazine had what she called her paper house. It was only a scrap book, but it was a very valuable one. She had a little of the mania of collecting, and when the dim prospect of actually building her home became almost visual she discovered a vast heap of pictures and articles, of schemes and penciled notes. They had been gathered on visits, at exhibitions and from her reading. She procured a scrap book and divided it into as many departments as she thought were necessary. They ran something like this: Plan, Elevations, Living-room, Dining-room, Hall, Bedroom, Bathroom, Kitchen and Cellar. There was a section for general information not able to be classified under this scheme, but she found that hints mostly worked down to specific recommendations under the scheme given above. Under such heading she pasted the collected hints and at last there grew a definite impression of just what she wanted each room to look like, and in that way a clear idea of the whole house. When they had the place to build upon she submitted her paper house to the architect in order to be passed upon. Of course, there was much to be changed but the architect had an excellent working basis to proceed upon and her home is proof of the success of careful planning.

There is another line of research that the prospective builder may work upon, and which will bring him good results and save him expense. The architect's genius combines a wide knowledge of many arts and trades, but he is not omnicient, and the client—especially if his architect is from another section of the country—may have some valuable information to contribute if he obtains a knowledge of local costs of materials and fixtures. Consultation with a builder of good reputation and intimacy with the products of manufacturers of water, lighting, heating and plumbing apparatus will serve in good stead.

And lastly one caution, do not think that your determination on a particular style of house is necessarily absolute. The architect's training may suggest a type somewhat different from what you have had in mind, but more fitting to your interior scheme. His sense of the esthetic should be the determining factor. If you are decided on this external feature, you must be prepared to let him make interior changes to fit it. After all style is largely determined by the use of local building materials and local conditions. Upon this much of the success of English and German rural architecture depends. There they try to interpret the spirit of the locality and pay attention to precedent and local tradition of the best sort. Much of the restless feeling and impression of unfitness we sometimes find fault with, is due to the desire to build something different, to have a unique house. Personality does not depend upon being different. It is more important to build in harmony to the neighborhood, but aim to do it better and truer, if possible. Therein lies the secret of the distinctive home.

MONTICELLO

AFTER visiting Stratford, most travelers return disappointed. The hope was to have approached the great human figure of the plays; the realization was to find even the ghost of the great dramatist driven from his birthplace. Restraining chains, admonitory signs, the post card vendor, the professional guide, the gaping crowd; all these drive out the attendant spirit of the place and substitute a chilling presence entirely foreign to it.

Monticello is now the property of an American. He and his father before him have dedicated it to the memory of Jefferson, have collected belongings that once were his and have made it a home where the traditions of its former inmate are carefully preserved. Visitors are welcomed if only they show a real desire to see the home of the Father of the Constitution. The estate is maintained with the care that the individual accords to his own dear possessions.

Now a self prompted person, earnest enough perhaps, has launched a campaign to make Monticello a public charge. Unfairly it is intimated that, "half a century of neglect and ingratitude" to Jefferson's memory is chargeable to the present owner. It is urged that, if necessary, the place be seized by right of eminent domain. Such methods are not consistent with the ideas or practices of the former owner. We believe his presence is much more evident under the existing state of affairs, than under such a scheme as that proposed. Nor do we agree with the statement that Monticello "suffers the desecration of sometimes being lived in." Rather would it be a desecration to divert the stream of curious sightseers through the halls where now at least there is still a semblance of the quiet and simplicity of the life that once was there. Let us not drive away the impression of Monticello as a home until we must.



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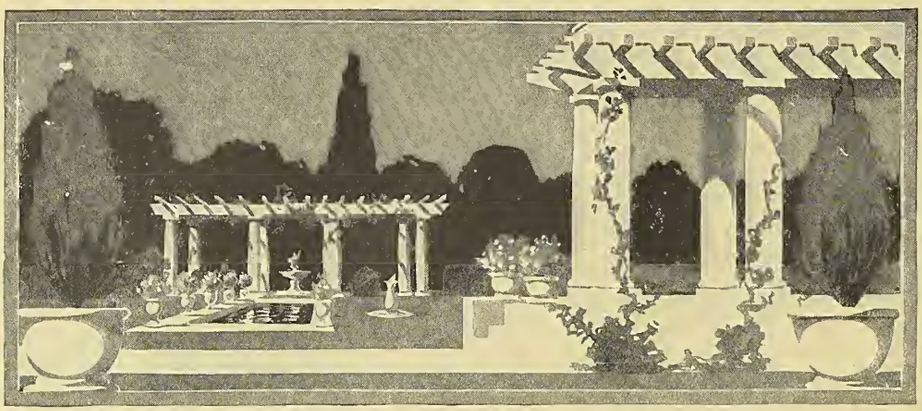
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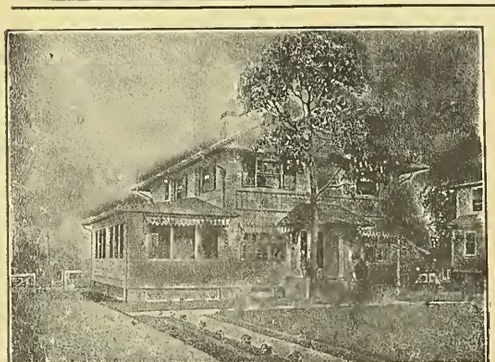
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Mistakes We Made in Building Our House

(*Continued from page 20*)

bathroom," as the second bathroom is usually termed, is frequently placed in a most exposed position as regards the cold. Over a vestibule is a cold location, and will cause trouble without a doubt in severe winter weather. Try and plan for a bathroom to be on a side of the house where cold winter winds are not so likely to strike it. It is also a mistaken theory that piping and apparatus may freeze and if thawed out no damage results. Washers are ruined and "ball-cocks" (these ball-cocks shut off the water supply when flush tanks have been filled to the amount they should hold) injured by the water being allowed to freeze around them. Then water flows away to waste, often unknown until a large bill for water comes in. Then a plumber's bill also comes for repairs which are necessary. We have just been through a most discouraging and expensive experience of this kind, and we think it will be necessary to shut off certain sections of our plumbing and drain out all water for the best part of the winter season simply to prevent expense and annoyance from frozen piping and apparatus. All of this could have been prevented by care in the beginning as regards the location of the bathrooms. Putting a bathroom in a cold location is simply inviting disaster. But many a house is built (as was ours) without care in this direction simply because experience is lacking. Covering piping with insulating coverings aids. Many good coverings are on the market, and may be purchased and put on at reasonable rates. Try and have all piping laid so it will not be on a wall which is on the outside of the house. If absolutely necessary to place it in such a position lay a strip of wood on the wall first and use an insulated covering.

On the second story, our bathroom had a floor made of wood. If you have a similar floor, arrange to have it put down in sections near where the piping passes through it. This method allows one to take up a section easily and make any necessary repairs to traps, pipes between the floors, etc., and is a money saver. We wished we had only known of it when we built our home; it would have saved us much money as years went by.

A favorite method at times is to build one or more of the second story rooms out from the main house, sometimes over a piazza, or simply as an extension or bay window. Rooms built this way are very difficult and expensive to heat, so that children find it impossible to play on the floor in the winter time (the very time they are in the house playing) on account of the floor being so cold. We would think of this if we built another home.

We would also have a square hall on the second floor and plan our rooms to open off it instead of long narrow halls which waste so much valuable space and which require so much more coal in the

winter time to heat them. This method of using a square hall is perfectly feasible; many a home could be so designed to advantage. We would not have a bedroom without two windows, if possible on separate sides of the room. This cannot always be done except on corner rooms, still it is possible to put two windows in every room and this should always be done.

We wish we had put a transom in some of the bedrooms; especially in the nursery. If we had we could have left the children's door closed and yet have heard anything occurring in the room. Many people like to have all doors locked in the house, or at least closed, so windows can be left open without a draft. A transom is inexpensive and allows ventilation and also prevents a draft.

A mistake in the plans made one part of the roof so low that it was difficult for a tall person to pass through a section of the third story hall. Such blunders are constantly occurring in plans. It is very difficult to rectify such mistakes after the house is under way. In our case we had to give up part of a good third story room simply to allow the hall to be enlarged so as to overcome this defect.

Always have all rooms finished in your third story. It is a very mistaken idea to leave some of them unfinished. It does not cost a great deal more to finish a room while the house is being built; it costs a very large amount to do after the house is complete. We found this out. Never have any room unfinished. A room next to an unfinished one will be cold in winter and will take far more heat to make it habitable. Also we found snow would enter an unfinished room around the window frames; and then it would melt, wetting the ceiling of the room below on the second story, and in time causing the ceiling to fall, if the snow is not gathered up each time it comes in. This caused us much trouble until it was rectified.

All rooms on the third floor should have two windows. Third story rooms are far more warm in summer on account of the roof heating them. We wish we had put two windows in all our third story rooms.

Taking up the outside of the house, our front steps were made far too narrow for comfort. When covered with ice in the winter they were really dangerous. Care should be taken to design steps wide enough to allow a person to mount them easily. Have your architect attend to this; he can do so with no trouble.

What You Should Know About Plumbing

(*Continued from page 39*)

Since its appearance on the market, the syphon water closet, which is made in many forms, has gradually gained precedence until now it leads all others in numbers used as well as in points of excellence. One of the latest types of syphon closets is supported by the piping and wall with no part touching the floor. This enables one to keep the floor sanitary.

Plant for Immediate Effect

Not for Future Generations

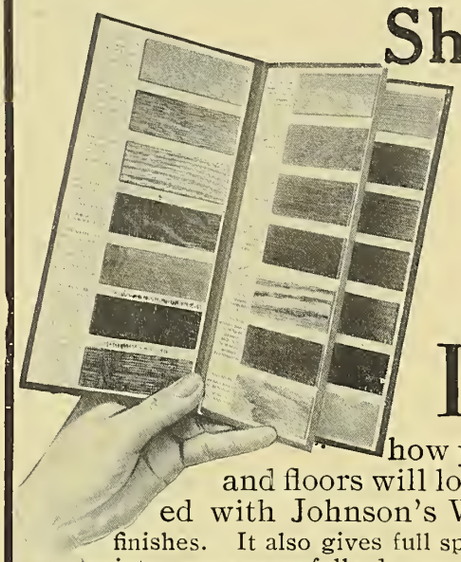
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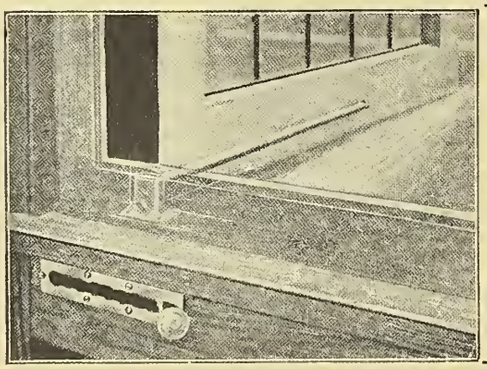
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All bathrooms should have a local ventilating pipe of at least twenty-five to thirty square inches cross-section, preferably back of the bath tub but convenient of access and continuing through the roof starting near the floor. Its inlet should be supplied with a damper register and continued independent through the roof. It may be galvanized iron all the way, although preferably it should be connected to a regular flue, paralleling and in the same chimney with a flue heated by the kitchen range, furnace or the like.

Probably the most used plumbing fixture in the average house is the kitchen sink which has had its share of improvements. The best of these now have the body, back and drain shelf all in one piece the advantages of which are too plain to need comment. Note the long solid back as shown at the bottom of page 39.

The one fixture which, like an octopus, has an outstretched arm to each fixture in the house and remains practically unseen is the range boiler or hot water storage tank. Its size depends upon the number of tenants, the minimum quantity being 30 gallons for a family of four or less, adding eight to ten gallons for each additional member of the family. It should invariably have a circulation pipe so that hot water can be instantly drawn at any fixture without waiting for it to travel from the boiler. These hot water pipes should all be covered with sectional pipe covering to conserve the heat. Another up-to-date method of supplying hot water is to place an automatic instantaneous gas hot water heater at some point in the line of piping and take all the hot water from this. With this system the opening of any hot water faucet automatically turns on the gas, which is lighted by a pilot light, and all water passing through the heater is heated to nearly the boiling point; when the water is shut off a thermostat shuts off the gas. This system furnishes boiling water at any hour of day or night and the fuel bill is always in proportion to the amount of hot water consumed.

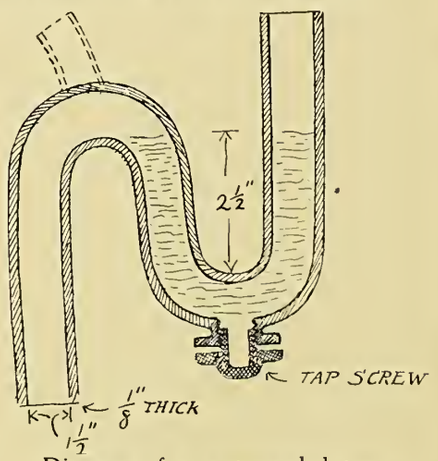


Diagram of a water-sealed trap

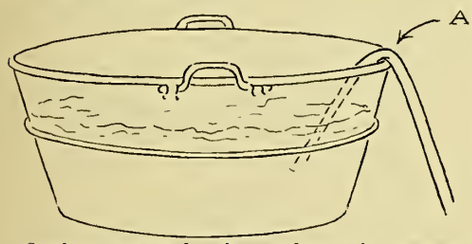
If the house is to be located where the soil is damp an automatic cellar drainer should be installed. These are generally placed in a little pit in the lower corner of the cellar, connected to the water pres-

sure pipe and the overflow to some convenient waste; but a better way is to keep all moisture outside of the cellar by filling in back of the cellar walls and under the concrete of the cellar bottom with broken rock and through this broken rock run one or two lines of small tile pipe to an outside frost proof pit in which the cellar drainer may be located.

The outside plumbing depends upon the size of the lawn, location of stable or garage, etc. For small lawns an attachment with stop and drain cock inside the frost line in cellar, so as to be closed off in winter, is sufficient; if the lawn is large there should be one or more lawn hydrants.

The modern garage requires special attention in the matter of plumbing. The floor should slope gradually to a common point in the centre, side or corner where in a slight depression it should empty into a bell trap from which a four-inch pipe should lead to a settling basin and grease trap, the walls and bottom of which should be thoroughly covered both inside and outside with portland cement. The accumulation of oil, grease and dirt may be removed from this trap whenever there is enough of either to necessitate taking it out. This catch basin is used to prevent the grease and dirt from stopping up the waste pipe and because it accomplishes just that desirable end it is advisable to run the waste from the sink separately into this grease trap, or if too far, make one near the kitchen.

If you feel that you must economize in the plumbing let the cutting be done in the number of fixtures or in the quality of the fixtures, but never in the waste and vent piping. On it depends sanitation. Also do not install inferior valves and tanks, for that would mean continuous trouble and expense.



Syphon principle shown by onion stem

Do not permit any iron or steel to come in contact with marble. If there is enough moisture about to cause the rusting of a nail head, against which a piece of marble is resting, the rust will in time penetrate through to the other side of the slab, even though it be an inch or two thick. This is what causes the rust colored spots often seen in marble slabs, not infrequently they come from wrought iron basin clamps which were used instead of brass ones.

Do not change your mind at the last moment and put in some misfit (does not fit the roughing in) fixture such as the basin at the bottom of page 38, where the pipes have been offset outside the tiling to match a change and thus an otherwise beautiful, sanitary bathroom has been disfigured.

Do not install any fixture which creates

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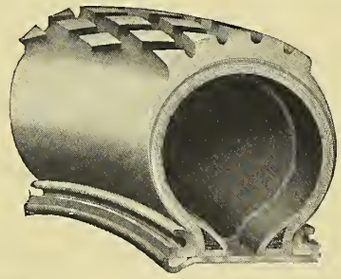
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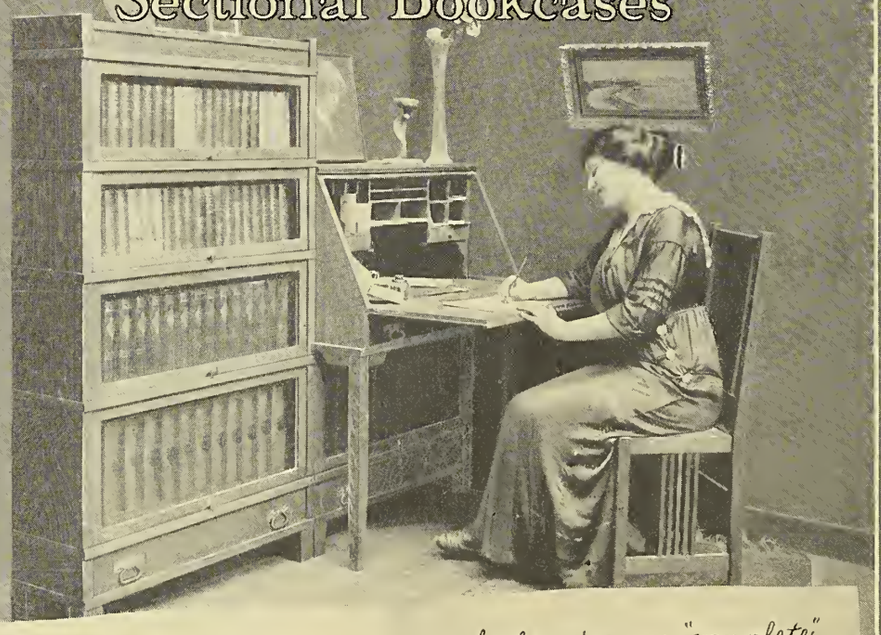
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a dust pocket, without leaving sufficient room to remove the dirt. The shower sink at the top of page 38 should be lowered to the level of the floor or built up around it, because it will, as it now stands, accumulate dirt.

Do not forget that what was satisfactory plumbing twenty-five years ago would not be considered to-day and that the best we have to-day will be none too good for to-morrow. This is one department of house building where it pays to do it correctly in the beginning and save money and get better satisfaction ever afterwards.



Some Building Economies

(*Continued from page* 22)

blocks and paints them with white cement-stain.

To sum up:

1. Compact and careful planning.
2. Stock sizes.
3. Simplicity.
4. Local material.

By paying proper attention to these four things, and getting proper professional advice, you can reduce the cost of your home more than a little; but don't try chasing elusive and illusive rainbows, as so many folk do!



The Vital Functions of Light in the Home

(*Continued from page* 28)

Nervous prostration, lack of literary inspiration, and insomnia may be relieved, restored, and cured by the proper treatment of light and color.

To-day the lighting of the office is harsh, white and cold. Why let the light of the home suggest to the mind of the tired business man working conditions?

This subject of psychology is irrevocably linked with artificial light, particularly in the home—which is the theatre of life. Once a dramatist, more daring than his fellows, staged a play. It dealt with the psychology of light. The critics read the manuscript and predicted failure. As usual the public decided. It was a wonderful success. Night after night thousands sat spellbound under the psychological influence of light. The "illuminating engineer" was not in evidence. Possibly he was asleep in the gallery.

The following abstract from one of the scenes will interest all in whom the sense of imagination and power to appreciate logic still holds sway.

Vavin, a scientist, is discovered with Halcomb and Dora—the lovers of the play. Before leaving them alone in the moonlight, he administers gratuitously a psychological benediction:

Vavin—Do you know the effect of color?
Halcomb—Color?

Vavin—You have heard of Nancy—in France—the town?
Halcomb—Yes.
Vavin—And Dr. Charcot?
Halcomb—Yes.
Vavin—He was my friend. We made together many experiments of the effect of color upon many persons under hypnotic influence. Invariably under yellow, or amber, the subject laughs; under green he is content; under red he is stimulated; if it is brown he is in fear; if violet he weeps; under blue he is—what you call it—*distrait?*
Dora—Perplexed?
Vavin—Perplexed!
Halcomb—Don't you think, Monsieur, so much attention to the light is a bit theatrical?
Vavin—Theatrical?
Halcomb—Not true to life.
Vavin—Life? Do you know, Monsieur, that sixty per cent. of the causes of falling in love are in the moonlight—in life?—Do you know the harvest moon?
Halcomb—You mean the full moon that comes at harvest time?
Vavin (nodding)—Do you know its peculiarity? Generally the full moon rises nearly an hour later each night.
Halcomb—Well?
Vavin—The harvest moon at the full comes up three nights almost at the same time. Did you ever think of that?—and why is it, do you suppose?
Halcomb—Why?
Vavin—That harvesters, men and women, shall fall in love with each other! Oh, it is a droll God, Monsieur, that plays that trick for one hour on His children. Think of it, Monsieur, a harvest moon for one hour! Is that of the theatre? No; it is a droll God. Now, I cannot show you; I have no arrangement to get the blue light, which is mystery, and the green light, which is content, and which together make a moonlight—when two people come together, mystified and happy, and say "Ah, this is Fate—we were for each other since the beginning."

Do not laugh, gentle reader, for it is tragedy—not comedy. Here in our midst, at our very door, yes, even within our home is a marvelous omnipotent agent, willing to aid us, yet fettered by man's stupidity and the shackles of a sordid, misdirected commercialism. Let us see how it lies within the power of each and every one of us to release this greatest of public servants—artificial light—and obtain as recompense—our own reward.

(*To be continued*)



Water Supply in Town and Country

(*Continued from page* 19)

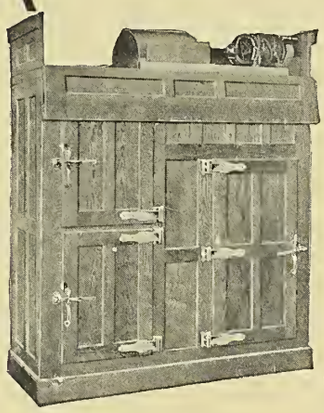
in which the pumping or lifting apparatus is located directly at the well and those in which this apparatus is located in the basement of the house or in an out building.

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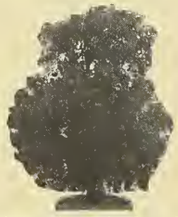
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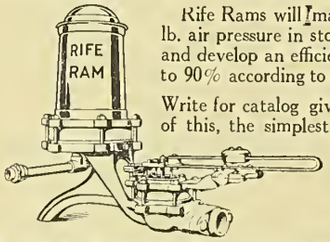
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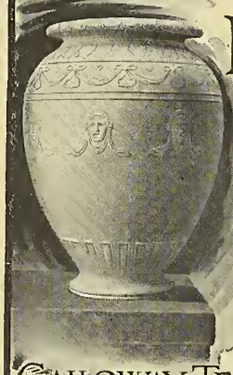
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the water level in the well, water will flow by gravity to the suction end of the pump and less power is required to operate it. This is not necessary, however, for modern water supply pumps (as made by leading manufacturers) are very efficient and capable of lifting water several feet above the well to the pressure tank.

Hand pumps can be used for forcing water into the pressure tank, or the pumps can be driven by power, the latter being most ideal of course, as they can be arranged automatically to keep the tank constantly supplied.

Electrically driven pumps have proved very satisfactory installations, for by means of the ingenious electric switches governing these most modern of water supply outfits the automatic control of the pump is assumed. Current is kept turned on at the switch at all times. When pressure in the tank falls below a certain point the switch automatically closes, which starts the electrically driven pump. Pressure, rising to a certain point, reverses the operation, opening the switch and stopping the pump. Pressure in the tank is automatically controlled by the drawing off of water at the faucets.

In many country houses the water supply outfit is run by a gasoline engine and these installations have proved very practical though they cannot be automatically controlled, since up to the present time there has been no method invented to start a gasoline engine automatically. With new developments in self-starting automobile engines, however, it is to boped something along this line will soon be perfected for water supply outfits. When a gasoline engine is used for pumping it is usually operated but a few minutes a day, at some stated period. In these installations it is necessary to use a pressure tank merely large enough to supply the house for a stated length of time, a period which can be readily computed by any reliable manufacturer of water supply apparatus.

The claims made by manufacturers of apparatus in which the pump or lift is located directly at the well is that they deliver fresh water directly to the fixtures, —water which has not been previously stored in a pressure tank. Most of this apparatus is operated by compressed air, the air compressor located in the basement of the house (or in an outbuilding) forcing air into a steel tank (not unlike an ordinary pressure tank) from which pipes carry compressed air to the "lifting" apparatus located in the well. With an electric installation the entire process is automatic, a self-acting switch being provided to start and stop the air compressor when pressure in the tank falls below or rises above the point at which the switch is set.

Lifts used with these compressed air outfits are very ingeniously constructed to suck water from the well and deliver it under pressure to the various fixtures. The distance of the well from the house makes no material difference, providing,

of course, that the pipe line is air tight and the compressor is of sufficient capacity.

In conclusion, it may be said that house owners need have no fear in installing a water supply outfit on their country place, for manufacturers have developed their apparatus to a high state of efficiency. Owners, however, should consult only with well established firms whose experience is unquestioned. Advice concerning water supply projects is freely given by most reliable concerns and apparatus installed according to manufacturer's directions will be found very satisfactory.



House Walls and Their Making

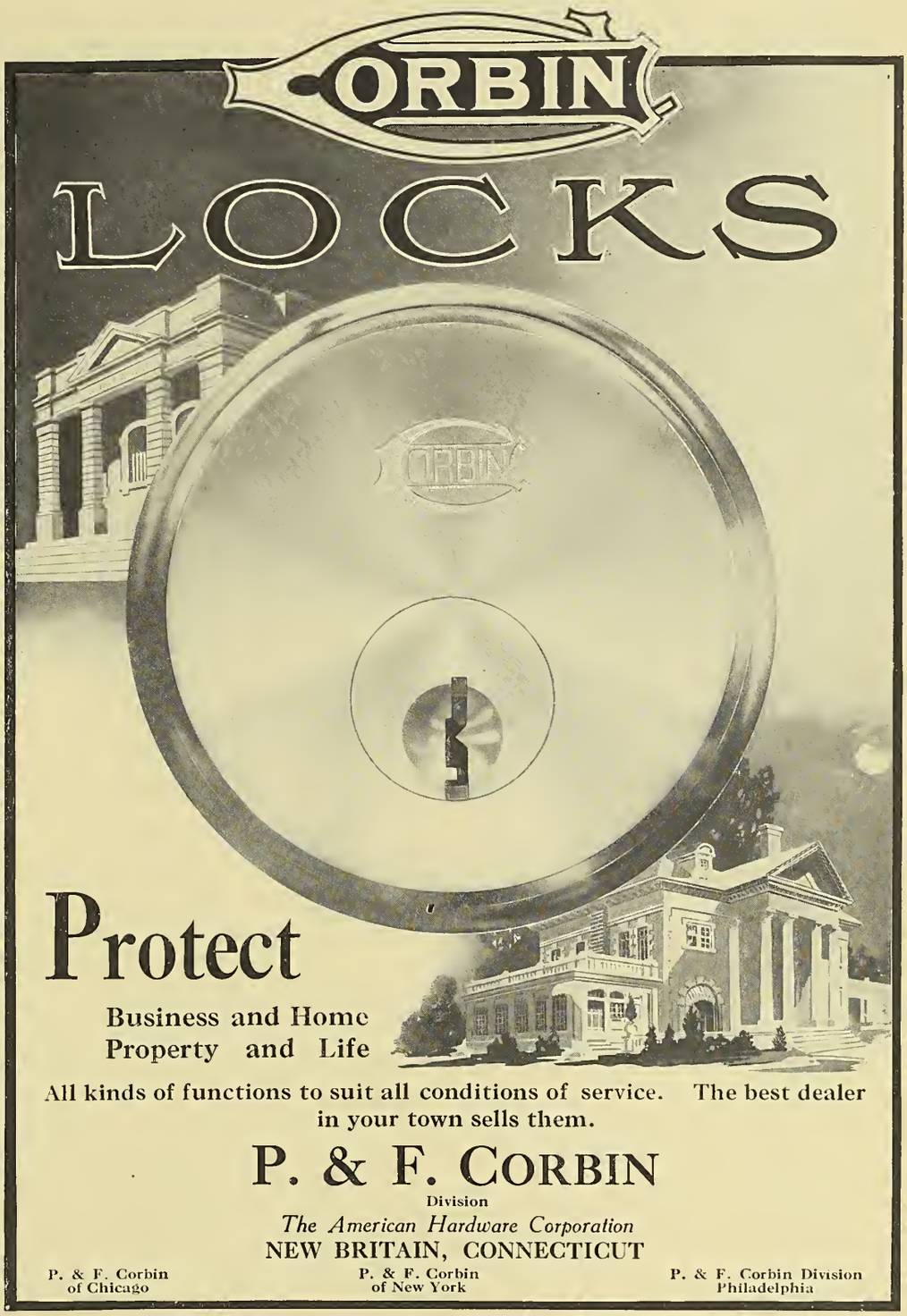
(*Continued from page* 34)

place, thus doing much to prevent draughts and leaks. For spanning openings, reinforced concrete lintels have proved the most satisfactory, although flat arches of hollow tile are often used. As the exterior of most hollow tile houses is stuccoed, care must be taken to give all cornices and copings a drip sufficiently wide to clear the walls below; this will help to avoid objectionable staining. If the cornice or belt courses project several inches or more they should be supported by projecting hollow tile courses and not built solidly of plaster or cement which would be sure to crack and break off. This exigency of wide eaves or projecting cornice is easily complied with since it is at one with good design, and finds picturesque prototypes in many of the old cottages abroad. In mentioning staining it is well to remember that if the finish plaster or stucco is put on while the walls are damp, discolorations are sure to follow.

It is a widespread fallacy that no particular skill is needed for building in terra cotta blocks. Unskilled workmen can be employed only under an able superintendent who will see that continuous horizontal and vertical spaces are laid to accommodate lighting and plumbing conduits, thus saving additional furring; to see that cracked and broken blocks are not used, and to see that walls are built absolutely plumb, else the discrepancies must be righted by the inside finish. I remember seeing a wall where the plaster was an inch and one-half at one end of the room, and barely a quarter of an inch at the other; this was the result of trying to correct the inaccuracy of the hollow tile wall.

The question is often asked whether wooden furring appreciably diminishes the fireproofness of a terra cotta house. From both this standpoint and that of sanitation, metal lath is superior, but considering that wooden furring is covered by plaster, it could hardly be considered inflammable.

The cost of a hollow tile house is but little greater than that of a first-class frame house, averaging about four or five per cent. more. On the same basis that



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the stone wall was figured, hollow tile walls run to about thirty cents a square foot of surface area.

Frame building, being our natural American heritage, is so well understood that only those points demanding the builder's closest attention will be noted here. It is very rare indeed that a shingle or clapboard frame wall leaks or is in any way greatly affected by moisture. This being more than can be said of any other building material, it is certainly worth some consideration. The only trouble of this nature ever encountered is around door and window openings, for which, therefore, flashing should not only be clearly specified but carefully superintended. This applies to the stuccoed frame house as well as the clapboard or shingled. Flashings (the metal strips used to keep out water where wood joints are not absolutely tight) two or three inches wide are a waste of time and money; if a place must be flashed it should be generously done, the metal turned under the stucco or woodwork for five or six inches and thoroughly painted.

It cannot be boasted of wood that it is fireproof, but certain precautions can be taken which assist greatly in retarding or preventing fires. Most important of these is the use of brick or metal fire stops. By building six or eight courses of light-burnt brick between the studs in every partition and in outer walls at each floor level, one obtains a formidable fire stop —a protection where it is most needed, in the walls between studs.

"Short-lived" is another much-quoted objection against frame houses. To be sure, the oldest monuments of antiquity are not of wood. Still, it is a noteworthy fact that those old Colonial houses which have been looked after are perfectly sound, and, moreover, when they are demolished to make room for "modern improvements" their wood, both framing and covering, is eagerly sought as the soundest obtainable to-day. However, if wood is to be preserved it must be painted and repaired from time to time. For this reason maintenance is a bigger item here than in a masonry structure; but this is to be expected of a material costing less in the first place. There was a time when building in wood was really inexpensive, but that time is past and lumber is becoming as high as masonry materials. Compared with hollow tile it costs four or five cents less a surface square foot, or about twenty-five cents.

Another type of wall still to be mentioned is the frame house veneered with brick. This consists of the ordinary frame rough-boarded and then an additional four inches of brick fastened to the boarding by means of iron clamps or ties. Some architects recommend this style of wall, but the test of time has not yet gone far enough to warrant strongly urging its adoption.

Whatever material is chosen for the wall the question of interior finish remains

about the same, since no one type of finish is limited to any one type of wall. Plaster wainscot, paneling or some one of the composition boards are all equally applicable to a masonry or frame house. In the case of wainscoting or wood paneling it is advisable to rough plaster the wall behind to prevent dampness affecting the woodwork. In addition to this precaution the wood should be set free of the wall and creosoted on the back. The cost of paneling of course exceeds that of plastering, but ordinary yellow pine wainscoting or sheathing average about the same.

The plasterer's art is again to be revived after the fashion of the seventeenth and eighteenth century English work, and although this applies more to ceilings than to side walls, nevertheless smooth, old-fashioned plaster has fallen into ill-repute and side walls are now generally rough finished. It is now said by brick manufacturers that an interior of artistically patterned brick can be built up at no greater cost than quarter-oak wainscoting. For certain rooms and particularly loggias this makes a most desirable treatment, and is steadily growing in favor.

The last and cheapest interior covering to be taken up is some variety of composition board. These boards come in sheets of varying sizes one-quarter of an inch thick, and may easily be cut by any saw to fit conditions. However, there are certain limitations to this material. It cannot be used if there is excessive moisture, even where the rest of the house has been freshly plastered, as it will surely bulge. The directions as to the spacing of studs and the way in which the sheets must run should all be carefully followed.

Our country has long lain under the accusation of "jerry building," supposed to be the result of the extensive use of wood. This is unjust to that time-honored material, for no style was ever more sincere or more solidly constructed than our early wooden Colonial. The truth is that instability is less a question of material than of method. Any honestly built wall will endure if properly protected against weather.

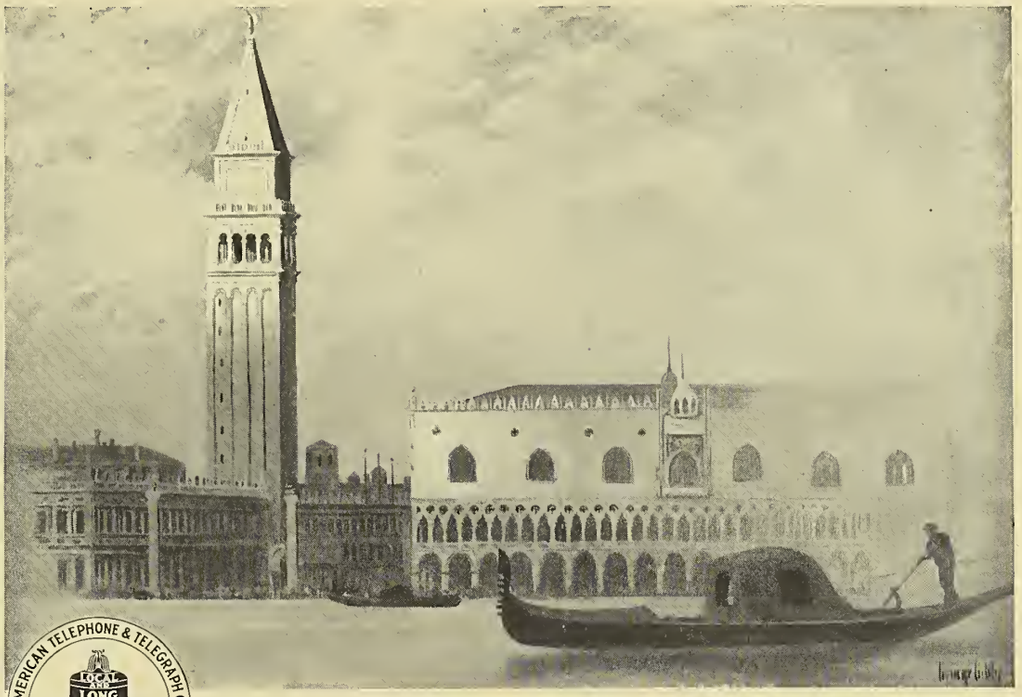


Ferns That Can Be Grown Successfully Indoors

(*Continued from page* 36)

makes a very attractive and easily managed bit of decoration for the dining- or living-room table.

While the three types enumerated above —the sword ferns, maidenhairs and spider ferns—contain the great majority of varieties available for house culture, there are a few others which should not be overlooked. Chief among these is the Holly Fern (*Cyrtomium falcatum*), which, with its dark green, substantial, glossy foliage making it, next to ordinary Boston ferns,



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suited to withstand the dry atmosphere and other hardships of ordinary house culture, has long been a favorite. A recent form, the crested holly fern (*C. Rochfordianum*), while having the same heavy and attractive foliage, has the pinnæ deeply serrated and also undulated, the consequent light and graceful effect relieving the compact, dense habit of growth, so that it makes a truly beautiful specimen. Be sure to give this splendid new-comer a trial among the next ferns you get.

Fern balls, which are usually composed of one of the *Davallias*, sometimes prove unsatisfactory. If you get them in the dormant state, be sure to order direct from some reliable large house whose supply is likely to be fresh, rather than take chances on them at a local store or florist's. The safest way is to get them already started. If you get them in dormant condition, soak them in tepid water for several hours and hang them where the night temperature will go as little as possible below sixty degrees, until they are well started. Be careful not to let the balls dry out at any time, which they are apt to do if hung up in a heated room where the air near the ceiling is hotter and drier than near the floor.

While these most reliable and attractive plants are not, strictly speaking, ferns, they require about the same treatment, and in popular thought are often classed with them. For several years the two types that have been in commerce, the climbing lace fern (*Asparagus plumosus nanus*) and Emerald feather (*A. Sprengeri*), have grown steadily more and more popular. The former has beautiful sprays of a light, sometimes almost golden, green color, than which there is no foliage more beautiful. Notwithstanding their delicacy they keep wonderfully well, both when cut and on the plant. They may be grown as dwarf bush plants, in the form of a fern, or as climbing vines. The original form (*A. plumosus*), when grown under proper conditions in the greenhouse, makes vines thirty or forty feet long, in a regular jungle tangle. Even the dwarf form (*A. P. nanus*) shows a strong tendency to climb, and if wanted in a low form the sprays must be pinched back at twelve to eighteen inches, and the roots rather restricted. For vines, keep in large pots, or boxes, and feed liberally.

Asparagus Sprengeri in both foliage and habit is very distinct from *A. plumosus*. The leaves resemble small glossy pine needles, borne in long sprays, and as it is trailing in habit it makes a unique and beautiful plant for stands and baskets. The sprays keep well when cut, and make an excellent background for flowers. It is now used more universally for green by florists than any other plant.

Either of the above may be started from seed, or propagated by dividing old plants, but small young plants may be had of the florists at a very low price. They will do well in a temperature of fifty to fifty-five degrees at night. Shower frequently, but water only moderately. *Hatcheri* resembles *plumosus nanus*, but is more compact



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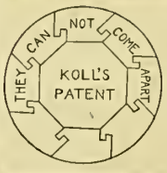


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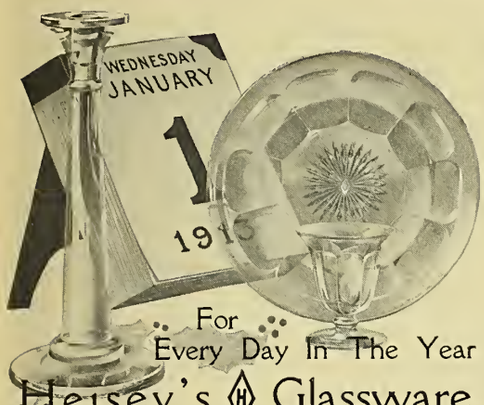




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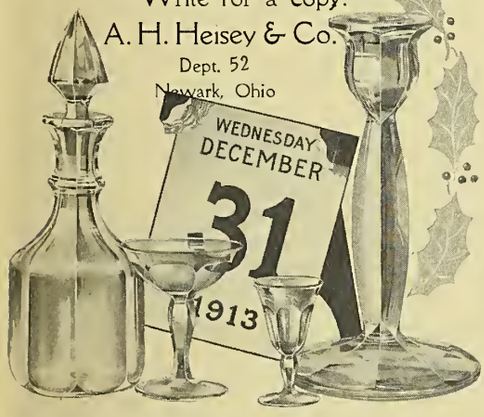
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in habit and the leaves are much closer together on the stems. If it remains true to type, and is as hardy as *plumosus,* it will replace it, for it certainly is a more beautiful plant. *A. S. variegata* is a very pretty "sport" with the leaves edged white.

The culture of ferns in the house is not very difficult, although it differs somewhat from that given plants of other kinds. For the best results ferns should be kept where the night temperature does not go much below fifty to fifty-five degrees, but the hardier sorts will stand a night occasionally considerably lower than this.

The most difficult of their requirements to supply is a moist atmosphere. While it is not possible to secure in a dwelling house, unless particular arrangements, such as an inclosed bay-window or special plant room have been provided, that humid atmosphere in which they thrive for the florist, it is nevertheless possible to do much by admitting fresh air as often as possible and keeping bowls of water to evaporate on top of radiators, or among the plants.

While ferns thrive in a moist atmosphere, they will be quickly affected by water retained about the roots. Drainage must be perfect, and to attain this end the soil used should be especially light and porous. A soil just right for the requirements of ferns may be had by mixing two parts screened leaf-mold and one each of sand and rich loam.

While with such a soil ferns will stand frequent watering, the foliage should be wet no oftener than is necessary to keep it clean, especially if the plants are in direct sunshine. When syringing the leaves is to be done, pick out a warm day so that the plants may dry off quickly near an open window. While ferns will do well enough on partly shaded positions it is a good plan to give them all the light possible without direct sunshine; and like all other house plants they should have all the fresh air possible while maintaining the proper temperature.

Many of the ferns can be increased either by runners which root like strawberry plants, and can be potted off in small pots, or by division, in which case the crown is separated into two or more pieces. These may be readily propagated at home. The sorts that are grown from spores (the fern's seeds) it will be better to get from the florist's.

The insect enemies of ferns are mealy bug, thrips and brown scale. If the plants are kept in good condition and the air from becoming too dry, these will seldom put in an appearance. Should they do so, however, clean them off at once. The mealy bugs may be dislodged with a toothpick or hairpin and spraying with some nicotine solution, or even laying the plants on their sides and applying water with force, should kill or dislodge either of the first two. The scale is not so easily gotten rid of; the only sure way is to take a sponge and water, and if necessary a dull knife or some other sharp-edged implement, and clean them off.

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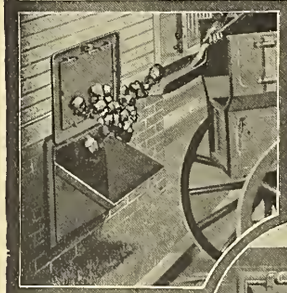
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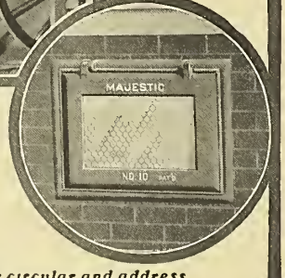
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The Way the Architect Works

(*Continued from page 25*)

Now, let us consider the sub-division of the arrangements and go over it piecemeal with an eye to the minor conveniences which are not necessarily a matter of money but of foresight, and which one may just as well have right as wrong.

Considering the exterior first, there is hardly any one thing that will do so much for the homelike cottage character of a house as setting it low on the ground. The majority of houses would be helped fifty per cent. if they had their underpinning knocked out and were dropped down so that the turf came just under the woodwork. The Philistine who would sacrifice everything for his light cellar is gradually being converted to the idea that the joy to be had from a flood of light in his cellar is more than offset by the pleasure that he and his family and the rest of the world get from the added attractiveness of his whole place. Nor is it apt to leave him in darkness. He may have as many area windows as he pleases and probably, unless the line is absolutely level, he may have some full windows. The owner should early learn that building is a series of compromises and he must constantly give up the less important for the more. It is in wise judgment in these matters that the success of the whole lies.

The matter of piazzas and sleeping porches is a troublesome one. A covered piazza means the shutting out from the rooms behind of a great portion of sun, light and air. On the other hand, the usefulness of an uncovered piazza has its limitations, not only in its exposure to the sun and rain but to the impossibility of its being screened. An awning stretched over a pipe frame is often used as a compromise roof to be removed in the winter when the piazza is not in use and the sun most desired in the house. This is often a happy solution of the problem as a shelter from the sun in the hot summer, the feeling of coolness and airiness being enhanced by the lightness of the shelter.

The second floor outdoor sleeping porch is a very difficult thing to handle satisfactorily; those which are hollowed out of the body of the house and covered with its roof are least objectionable. One piazza on top of another is apt to be an excrescence. It will not tie in with the



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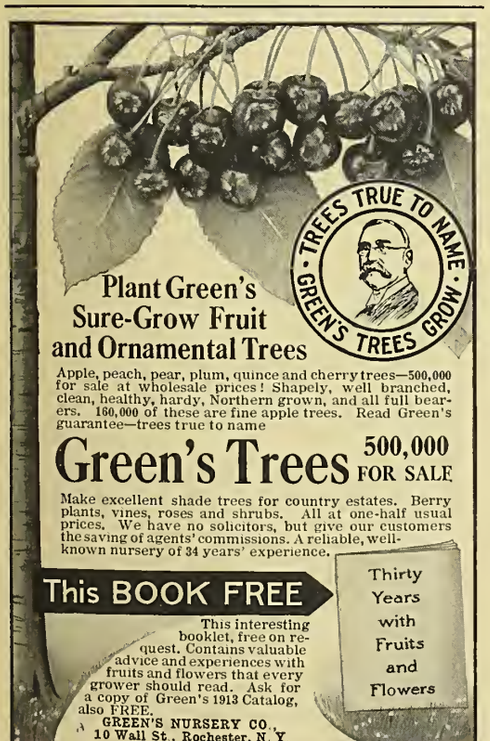
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house; it will "float" and not look organic.

Another feature that is often detrimental to the outside appearance is the use of dormer windows. A plain roof, unbroken is usually to be preferred, and if the space requirements in the third floor make dormers necessary, it is well to keep them on the back of the house, if possible. So much for the exterior; now let us consider some of the crucial points in our interior arrangement.

In the first place, the height of our ceilings is best kept down—not over eight feet six inches. It not only tends to make rooms look larger but gives a sense of coziness that is well worth having. If we get the height under eight feet, and beam our ceilings, we must, however, be careful to avoid a heavy look. The beams should not be given too much depth or be too close together.

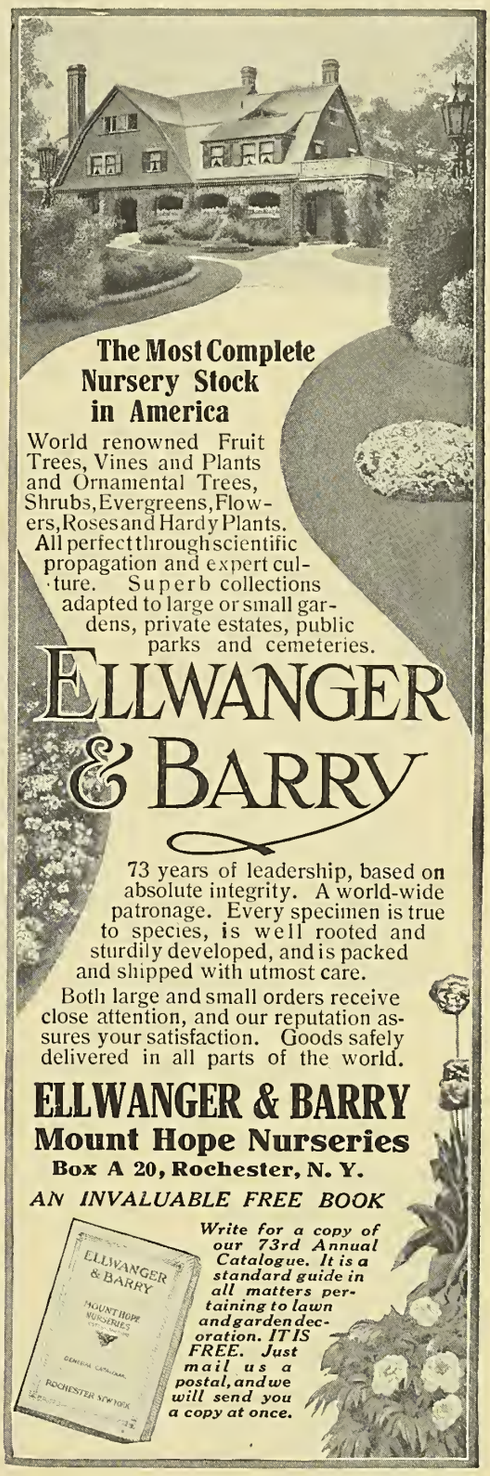
The horizontal feeling which results from a beam ceiling has a very subtle value of its own, and it is well to carry out the horizontal note in other ways. The tops of the bookcases, the paneling (if we have any) and mantel shelf are often made to line. An agreeable height for such a division is sometimes taken as two-thirds of the height of the room and a little more than half is found to be an attractive division. Exactly half would be very unfortunate, as neither the band above or below would predominate.

The feeling against casement windows is passing—as it should. The idea that they are not tight never was true, less now than ever with the introduction of the metal weather strip. Care must be taken, however, with casements that open in, as it is harder to make them tight against the elements. The attractiveness of casement windows needs no plea, and they are a great aid to the designer, as the unit of light and air being small, can be more accurately apportioned to his needs. If casements are used with small sash over them, care must be taken that the transom bar does not come on a line with the eye. With the third floor windows, the tops will very often have to be lower than the eye. While this is unfortunate, it is not as objectionable here, as one naturally looks down.

When casements open out, our awnings must be specially arranged, and blinds or shutters can only be used with patent closers operated from within, and then they cannot be locked from the outside. This is well to consider in summer houses where windows have to be shuttered up for the winter.

Screens may either be hinged and opened in or the roller screen which is now coming into the market may be used. If our casements are lead, we must be careful not to slam our windows, as we will bulge the canes—as the leads are called.

A new casement has recently come into the market, hinged in pairs to each other and pivoted at top and bottom in a slot so that the pairs (there may be several such in one window) may not only open



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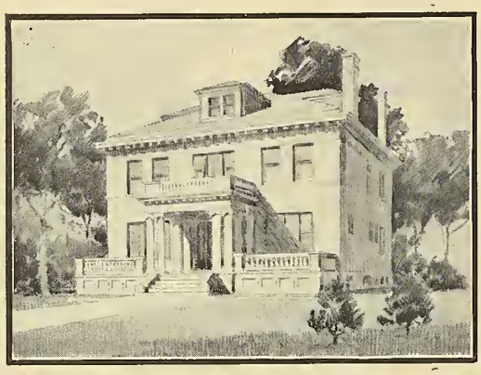
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and shut but slide from end to end, so doing away with any vertical muntin.

The French window, which is only a larger casement, is usually best swung in. If swung out, its size makes it difficult to secure against the wind and the inside finish is exposed to the weather. This may be made tight by the use of various patent weather strips.

Another point that the house-builder should consider is that of wiring his house heavily enough to take not only his electric lights but the various electric household appliances which are fast becoming popular. The tendency of the price of current to come down plainly indicates that much more of our work in the near future will be done by electricity than we have been able to afford in the past. Nor must he forget to decide whether or no he will install the necessary piping for a vacuum cleaning apparatus. This may be cheaply done when the house is built, and the necessary outlets placed in the baseboards where desired; the pipe concealed in the walls and coming through the cellar ceiling where it will be left until the owner is ready to attach his motor.

As chimneys are expensive, it is often possible to combine a fireplace with the kitchen flue. If the kitchen is not directly behind the dining-room, we may easily run a small pipe through the china closet, being careful to keep it away from woodwork.

In locating the fireplaces, we must be careful to avoid draughts, as there will always be a current of air passing up the flue, and if the fireplace is placed too near a hall door, it will prove annoying.

We shall do well to remember that with our third floor fireplace the great problem is bringing up the wood, and we should plan for a wood box. A built-in seat having a cover to lift may often be arranged. The same thing holds good for the first floor, and here we may have either the bottom of our box so that it can be filled from the cellar or a small wood elevator worked by hand in the cellar may come up into some such space. A cupboard behind paneling is often utilized for this purpose.

Another useful arrangement in connection with a chimney is the utilization of the space that is often found in a chimney breast above the mantel. Small book shelves, cupboards, etc., may be worked in here to advantage.

That part of the kitchen chimney below the first floor and which is merely a shell of brick surrounding a hollow space is sometimes utilized as a sort of automatic ash sifter. The ash pit of the range has an opening directly under the grate connected to a sloping pipe. The ashes drop directly into this hole and slide into the top of the chimney space at one end. Inside of this chamber is placed a wire screen of one-half-inch mesh sloped at about forty-five degrees from just under the entering ash pipe at the top to near the bottom at the other side. As the ashes slide down over this, the dust falls through and accumulates at the bottom, while the larger



Smith *and* His Wife *and* Their Evenings

How She Helped Cut Out Overtime at the Office

Young Mrs. Tom Smith thought her husband had to work entirely too hard. It worried her.

Night after night, Tom had to go back to his desk. Frequently on Sundays, too.

He was the "Statistics Man" of a small but growing company, and the eye-straining, brain-fagging work with figures, records and details was telling on him.

Besides, he and she were cheated out of their evenings together.

Well, one day Mrs. Tom read in a magazine about a time-work-and-worry-saving business machine.

And straightway she saw it would cut out the night-work which was robbing Tom of his rest and recreation.

It seemed to her a wonderful machine. For it did work which she had supposed only man's brains could do.

It added, multiplied, subtracted and divided.

It added dollars and cents, or feet and inches, or pounds and ounces, or fractions, or anything.

And it was mechanically impossible for the machine to make a mistake.

It was the Burroughs Adding and Listing Machine.

And sent to any office on free trial.

Mrs. Tom could hardly wait to tell Tom.

He knew of the "Burroughs" but said the business wasn't "Big enough." Besides, he hadn't the say-so."

But Mrs. Tom was determined to "emancipate" her husband.

So, taking matters in her own hands, while he was at the office one day, she wrote the manufacturers for their book, "A Better Day's Profits"—telling them to send it to Tom's firm.

Well, the book came, addressed to the company—and went to the Boss's desk. It wasn't a catalog—but a business book—so unusual, so full of new profit-producing ways of doing things, that it set the gentleman thinking.

And the free, fair trial, which put it up to the machine to make good, appealed to the business-sense of the Boss.

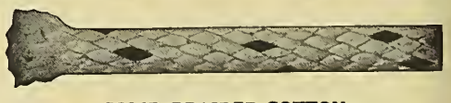
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pieces which do not pass through collect at the lower end, where they are taken out periodically and reburnt. If one's range is not near enough to the chimney the ashes may be taken out of the range in the usual manner and poured down a trap door in the right location. If the chimney is not found suitable, this sifting may also be done by using a galvanized iron chute instead of the chimney, in which case the ash may empty directly into one barrel, the coal into another; sifted and ready to be removed, without having been touched, or any dust had a chance to escape.

Among other labor-saving devices about the kitchens that have proved their worth are the plate warmer in the china closet. This may be either a small radiator which will also heat the closet or an electric or gas appliance. The radiator connected to the house heating plant is the simplest and least expensive, but only serviceable while the heat is on.

The china closet may also contain a safe, but if this is large we must remember its weight and provide for it.

There are innumerable contrivances and arrangements that may be inculcated into the plans for their betterment, but one of the very surest ways of getting the most satisfactory result is a very lavish expenditure—of time. Go to your architect in season, so that you will have plenty of time to mull over all the arrangements and rearrangements and re-rearrangements, so that you may feel sure that the final layout is the very best possible one, all things considered, and so rest content and immune from what we are told is the saddest of all words.



Inside the House

(*Continued from page* 43)

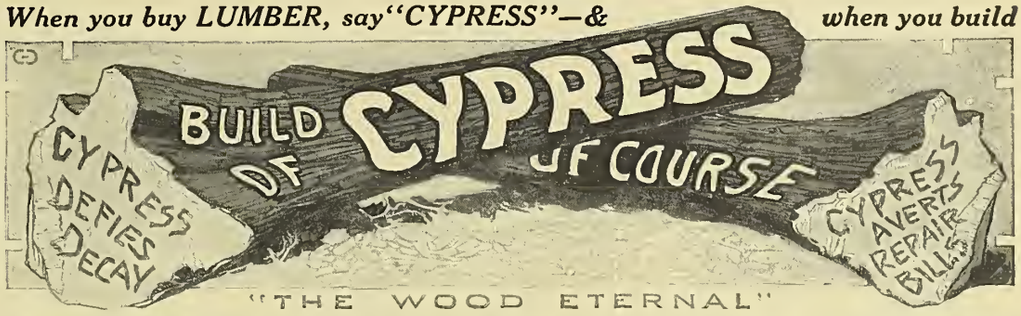
pies only a small amount of floor space, while in the average bathroom the wall space that it takes would most likely be turned over to one large window.

For the Butler's Pantry

AMONG the noticeable features of a recently completed house at Garden City, Long Island, is a rather new and decidedly practical form of the radiator that is furnished with a compartment for keeping dishes warm. Radiators of this description were originally designed for use in the dining-room, and in each was a compartment with one or two shelves and a door, constructed so that plates and even dishes of food could be kept hot indefinitely.

The newer scheme, as shown in the illustration, is the placing of the compartment radiator in the butler's pantry instead of the dining-room. The radiator is directly in front of the window, in what is generally conceded to be the best position for heating a room to good advantage,

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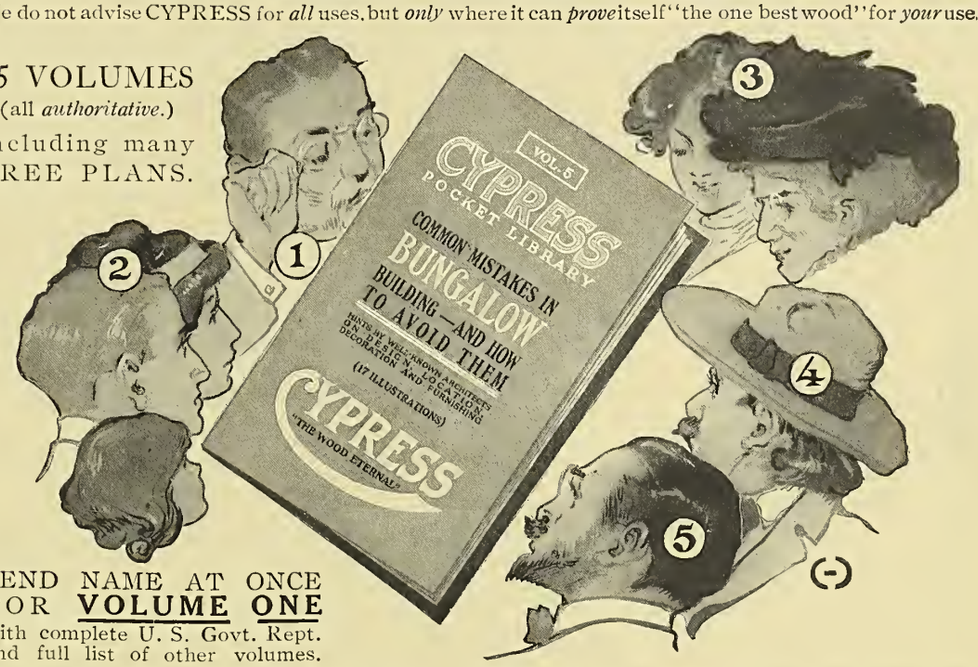


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3 You don't tell the dry goods clerk: "I want 8 yds. of *cloth!*" You say "silk," "wool" or "linen."

4 You don't merely order "200 head of live stock!" You specify Horses, Cattle, etc., *and the Breed.*

5 You don't tell the contractor: "Build me a house!—and paint it!" You dictate the *plans.* And the *colors.*

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and the compartment is large enough to be thoroughly useful, occupying as it does about half the cubic space of the entire radiator. There are three shelves inside, so that a number of dishes or plates can be kept warm at the same time.

Another decided advantage of this useful addition to the butler's pantry is the marble shelf placed over the top of the radiator. This is quite broad, and as it retains the heat it serves as a most convenient resting place for dishes that must be kept hot after they are taken from the kitchen.



Garden Suggestions and Queries

(*Continued from page* 45)

as to insure better fruit. Currants are produced on wood two or more years old and therefore any branches cut should be removed after the first season's growth, or else left for several years. Grapes are pruned according to the system by which they are grown. For best results the vines should be kept back to two to four "arms," and these cut back, at the winter pruning, to eight or ten buds or eyes. Where, however, the vines have been trained over an arch or arbor, the best way is to cut back all the laterals to two to four eyes each winter. This may seem severe treatment but the new shoots grow with almost incredible rapidity, and the fruit will be 100 per cent. better than if a jungle of old vines and an over-burden of fruit are left, for a grape vine left to itself will set about four times the amount of fruit it can carry through in any kind of shape. The great advantage of winter spraying is that much stronger solutions may be used than in the summer. Lime-sulphur wash has long been a standard winter spray, but preparations of miscible oils are yearly finding greater favor and are less trouble for the home orchardist to apply. Full directions for use come with the various spraying preparations, and it will hardly pay the person with only a few trees to mix his own materials. Remember that the efficiency of spraying will depend wholly—providing you have a good solution—upon the thoroughness with which it is done. Many plant enemies, including the San José scale, multiply so rapidly that if any considerable percentage of them escape there will be practically no benefit from the operation of spraying. Be sure that every inch of bark on limbs and twigs is covered. Where one has but a few trees this is most easily done by going over them twice, in opposite directions; using the style of spray nozzles known as "goose-neck" will also be of great advantage, as by a turn of the wrist the spray may be applied first from one side and then from the other, saving the operator a great deal of moving about.

Spraying is perhaps better understood now than ever before, and the increased interest in and knowledge of it on the part of the general public is most encouraging.



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THE WARNER BROTHERS COMPANY
NEW YORK CHICAGO SAN FRANCISCO

That Window Problem

(*Continued from page* 13)

monotonous end wall. And take the first illustration; the single second-story window, to the right, has to be widened out with shutters, to the size of the triple window underneath. Indeed, one wishes that the architect of the left-hand house at the top of page 13 had done this.

And about bay windows: do you notice how very commonplace the front bay of the right-hand house is? That is because the windows do not fill the bay—there's a little wall space between. The bay in the upper right-hand illustration on page 13—though it is badly located—is, in itself, well designed; the windows fill it completely, and give it unity.

English bay windows, new and old, always have this unity; I wish I could say as much for all our American bays.

"These American guillotine windows—no! I will not have them!" cried a French client to me, the other day. "I wish casements; casements such as one finds from Calais to Constantinople; letting in bursts of bright sunshine and pure, health-giving breezes!" No doubt; but, really, I couldn't see why the "guillotine" window ("double-hung window" is the proper term) would not let in just as desirable a brand of breeze and sunshine. And, so far as mere comfort and convenience go, the double-hung window ranks high. I have both sorts in my own home; time and again have I gathered up the wreckage of a casement from grass plot or walk, while my double-hung windows are as good as new. A sudden summer gust comes up, we rush to close the casements just a trifle too late, an adjuster slips, the sash flaps wildly a moment, and then—— Still, the casement is very effective; so, if you use this sort of window, be sure to have the very best sort of heavy bronze metal adjusters. Plated cast-iron is much cheaper in first cost; but it is always breaking at the critical moment, and causing endless expense and trouble. Let the hinges be amply heavy, too; and have three hinges to each sash. Transoms should be hung at the top, to swing upward and outward, or else pivoted in the middle. Never have casement or transom to open inward: it is almost utterly impossible to keep rain-water from leaking in, with such.

Double-hung windows, of course, slide up and down, and are balanced with weights or springs. Personally I prefer the weights, though many architects think springs are better. The sash cord should be amply heavy, and very tightly woven; otherwise it will wear out and break in a few years. For heavy plate-glass windows we generally need lead weights (iron is too bulky) and bronze metal chains; but unless these weights and chains are expressly specified your builder will have a right to put in an "extra" for them. Old houses have often no provision for weights; the windows are clumsily propped up by sticks or some such thing. For these, spring balances can be used.



YOU'VE often been embarrassed by the noisy flushing of the bathroom closet! And the more distinguished your guests, the more noise the closet made—and it seemed as though the water *never would* stop! The answer to this perplexing problem is the

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Si-wel-clo Noiseless Siphon Jet Closet

The Siwelclo was designed with but one idea—to make a noiseless yet sanitary closet. Properly install a Siwelclo in any part of the house—even in the *lower hall*—it is impossible to hear it in the next room.

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To those about to build or remodel—the silent features of a Siwelclo are too important to overlook. Ask your architect or plumber about Trenton Potteries Vitreous China and Solid Porcelain.

Send for Booklet **S8**

"Bath Rooms of Character." It will prove valuable and interesting to all who are planning to build.

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Used as a blind or an awning, pulled up out of sight if desired. Slats open and close. Admit air, exclude sun. Very Durable and Artistic. Orders should be placed NOW for Spring or Summer Delivery.


Inside View.


Outside View.

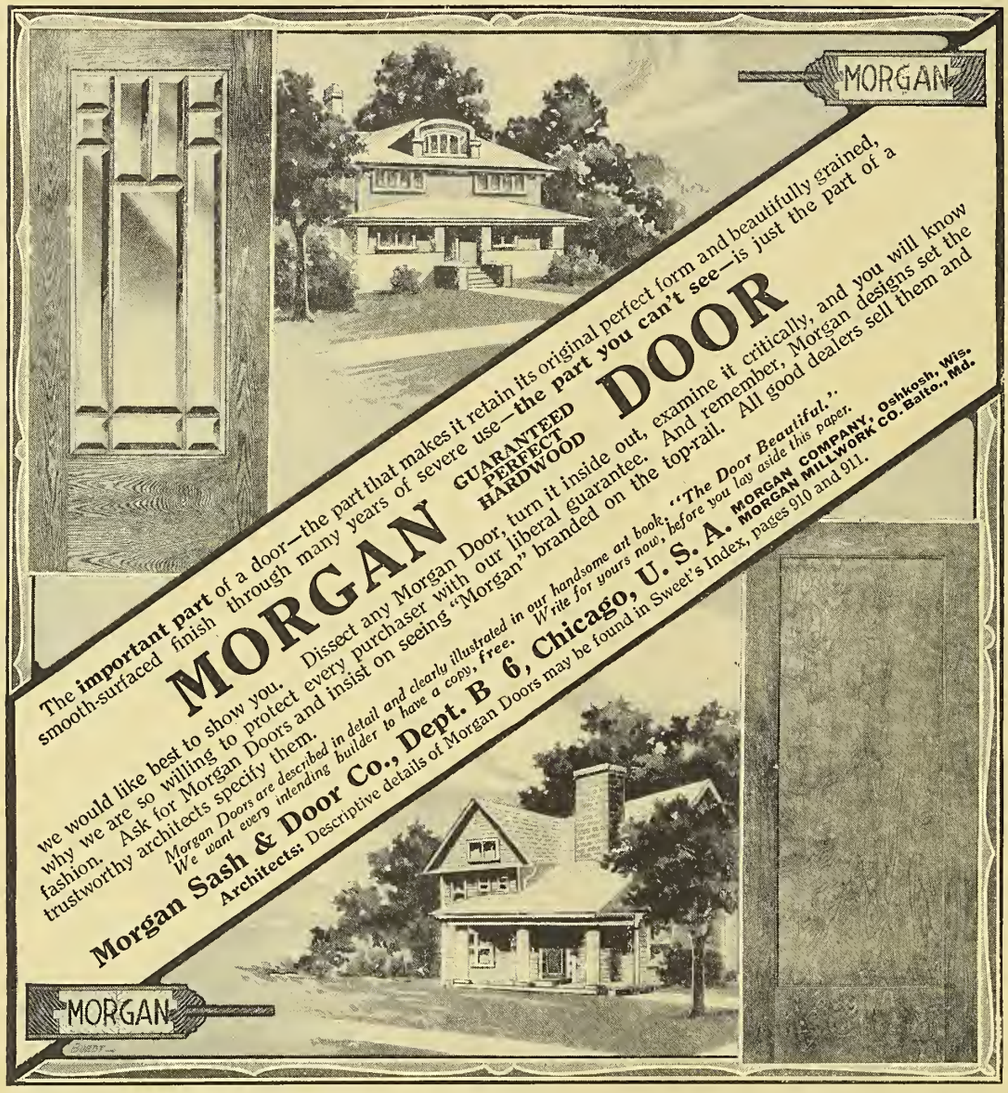

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Between the two layers of glass in the Sunlight Double Glass Sash is an air space 5/8 of an inch in thickness

This is the secret of the complete success of that sash everywhere for hot-beds and cold-frames.

Above the glass winter weather—zero, perhaps —Below the glass a little spot of summer

With warm earth and plants, growing as though it were May; violets to pluck throughout the Winter; pansies in bloom by late February; radishes and lettuce in constant supply for the table; cabbage, beet, tomato, pepper, melon and other plants, properly timed, ready in the Spring to go out of doors and make early crops.

You can have a bed like this at little cost, for the Sunlight Sash is complete in itself. It needs no mats or boards. The only cover is the air sealed between the layers of glass and this does not have to be bought, or to be lifted on or off. It weighs nothing and cannot even be seen; but a raging blizzard cannot penetrate it.

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Write at once for our catalog. It is free. Enclose 4c if you want Prof. Massey's booklet on hot-beds and cold-frames.



Sunlight Double Glass Sash Co. 944 E. Broadway, Louisville, Ky.

Preserving Eggs

(*Continued from page 5*)

lage backyard if we begin planning to do so now. The secret is to put them away at this time of plentitude and keep them until the day of great need.

People who have a good cellar and sell their eggs during the summer and fall at twelve to fifteen cents a dozen, are making a serious mistake. That eggs can be successfully kept for many months by means of the 'water glass' method has now been well proven. Such practice is perfectly legitimate, for the eggs keep in the best of condition, and there is no reason why they should not be used.

The most successful preservative is water glass (sodium silicate)—a sirupy fluid for sale at all drug stores at prices ranging from thirty to seventy-five cents per gallon, depending upon how much profit the druggist desires. To every one part of this substance add nine parts of water that has been well boiled and allowed to cool before mixing. Thoroughly stir the solution while it is being mixed, and pour it over the eggs which have already been packed in an earthen or wooden vessel. Or, the water glass solution may be put in stone jars and the eggs added daily as gathered. Be sure every egg is fresh and clean, and the solution must cover every egg all of the time. A gallon of the water glass, properly diluted as above directed, will be sufficient to cover about fifty dozen eggs, which immediately discloses the fact that the method is exceedingly inexpensive.

The jars of preserved eggs should be kept in a cellar or other location where the temperature does not rise above sixty degrees. Be careful that no eggs more than a week old are packed, because one bad egg in the lot will spoil all in that jar. Also remember that infertile eggs are best to keep a long time—that is, eggs from unmated hens. After the mating season is over, roosters are a dead loss on the place anyway, for hens will lay every bit as well without them, if not better. Besides, infertile eggs are always preferred to fertile ones for commercial purposes. So, if possible, let a few days elapse after all males have been kept from the flock before beginning to save eggs for preserving. While fertile eggs may be used if absolutely fresh, yet remember that infertile ones always keep better.

If these simple instructions are observed, there is no reason why results should not be more than satisfactory in every way. After packing, the eggs need no attention whatever, and even if held for a number of months, they should be perfectly edible. Wipe them dry and they will not even have the appearance of having been "pickled."

This matter of preserved eggs is especially of interest to the keeper of a small flock. The average flock of a dozen hens produces practically no eggs in December. This is when the pickled eggs come in.

R. B. SANDO

How To Paint And Decorate Your Home

Protection and Beauty Easily Obtained By Using Scientifically Made Paints

There are two main objects you want to achieve when you paint your house—the protection and preservation of the exposed surfaces, and the decoration of the building as a whole. Neither of these purposes can be sacrificed; both must be accomplished, and with them is the ever-present question of economy. Today it is possible to accomplish all three of these purposes as it never was before.

In the past there was much guess-work in the making of paint. The painter mixed a little "pure lead and oil," put in some turpentine, naphtha or other "thinner" until he got it "about right," and then applied it to the house. This was the method of our forefathers—but we do things better nowadays.

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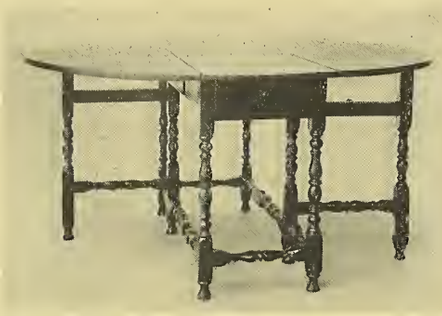
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The Collector's Corner

THERE have been appearing during the last year in many antique shops, that variety of table known as gate-legged. The number of legs may run from eight to twenty, and there may be drawers between the middle sets of legs. These tables came early into use, following shortly after the cavalier and table boards. They were being made in considerable quantities by the opening of the Seventeenth Century, and were produced in small numbers till about 1850 in rural English districts. Now again their manufacture is being taken up, and in some of the Consular Reports, these are mentioned among the articles being made in the midland counties for the American market—being made and sold as antiques.

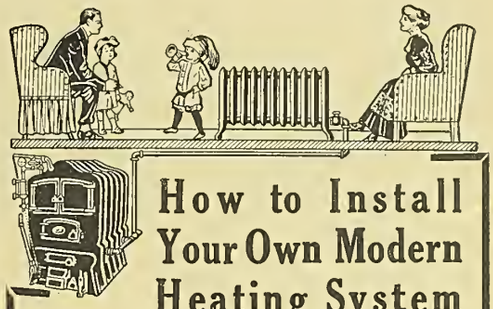
The veritable English antique tables are without exception made from oak. An English authority on old oak says he never saw one that was not made of this wood. The old ones are of course very dark, heavy and put together with wooden pins; the drawers overlap and the handles are the old bail or drop fastened in with wire. The wood need not necessarily be English oak, for please remember that Virginia oak in log and mast was one of our best export commodities very early in our history.

The turning on the legs of these tables



A gate-legged table of mahogany, probably of American Colonial manufacture

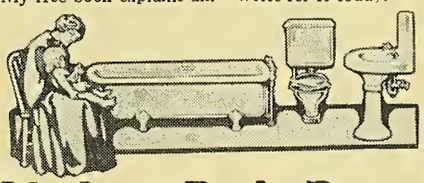
varies too, those with twist legs being the most highly esteemed. The top was commonly of the same material as the legs, and they were convenient tables, since when not in use they could fold up and be set against the wall. The feet to these tables vary considerably. They may be the ball foot or some of its variations, they may be the Dutch foot, or they may even have the grooving seen on the Spanish foot. Like the overlapping drawer, the style of handle and the wood, the foot is somewhat indicative of the age of the piece. The table shown is of mahogany with mahogany legs and put together with wooden pegs. Its proportions are odd, for it measures barely twenty-five inches high, and stools must have been used to sit at it with any degree of comfort. It is probably of American manufacture, because of the wood of which it was made. Before 1700 tables of this pattern were made at Philadelphia, one of the great furniture centers, of maple, of walnut and of button-



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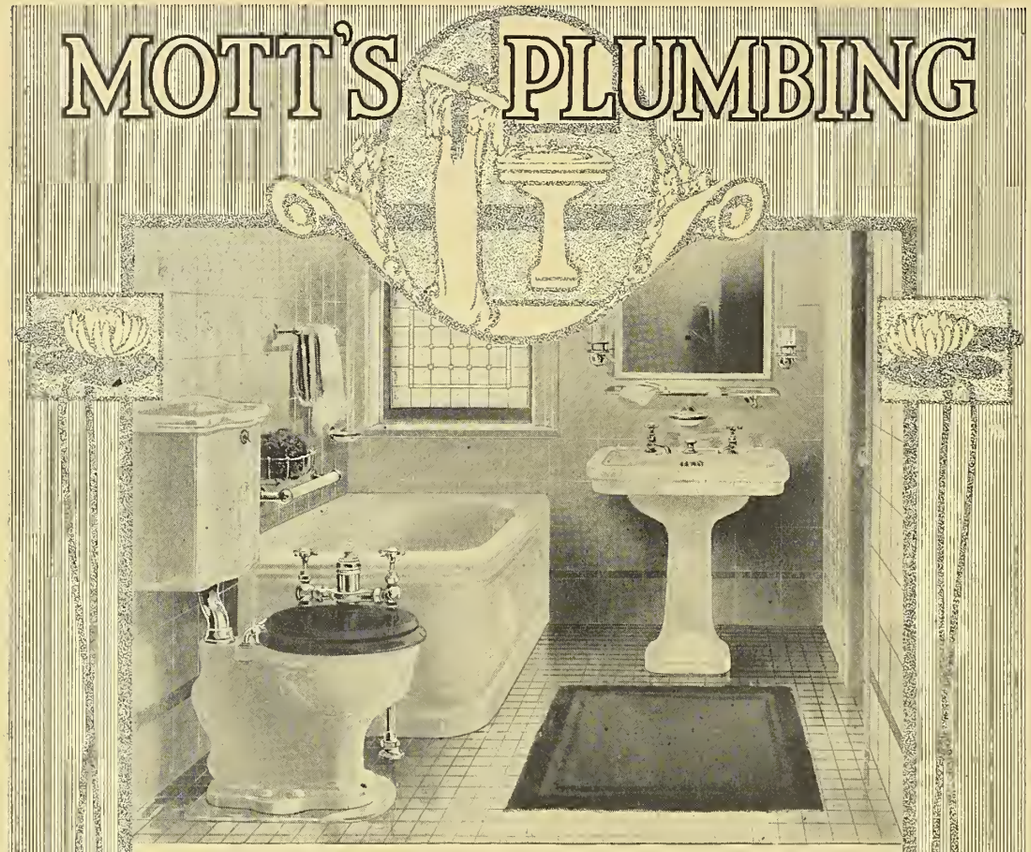
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wood, walnut being used as late as 1795 in Philadelphia and quoted as somewhat less in price than mahogany. A table similar to this, once the property of Sir William Johnson, so great a figure in the Mohawk Valley, is shown at the Albany Historical Society. It too is of mahogany.



The Kind of a Roof for Your House

(*Continued from page* 16)

old work the slate was perfectly graded so that each course was 1/8" narrower or less than the course below, with a result that was not discernible to the eye, except in its resulting effect, which made the roof seem to slope easily and beautifully from the eaves to the ridge with a long, soft, easy line, and unconsciously gratified the eye of even the untrained observer. Abroad, slate is used in much more irregular and picturesque ways than in America.

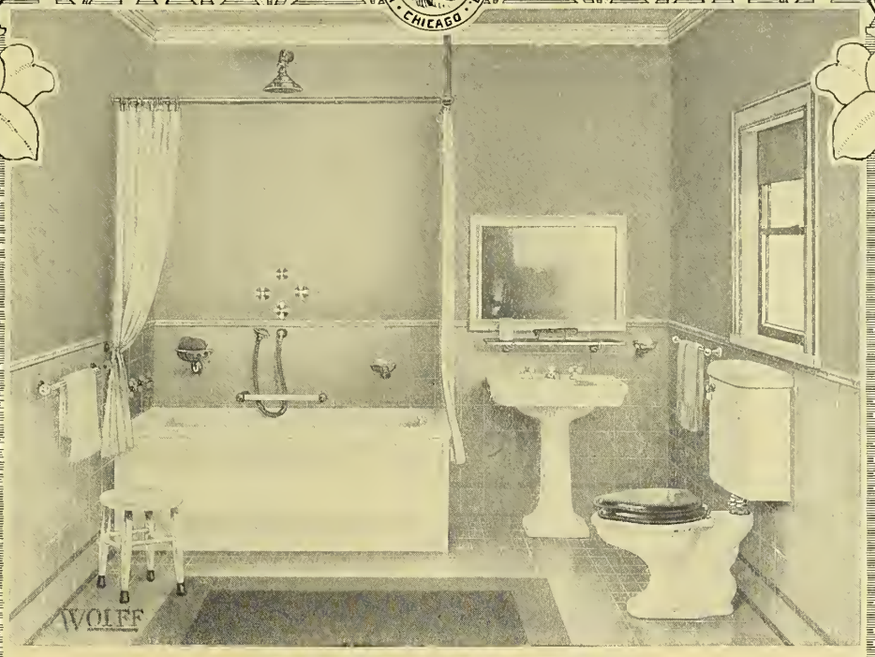
With slate, galvanized iron or copper nails should be used. In the personal experience of the writer it has generally been found that the slight difference existing between the cost of galvanized iron and the copper nail is well worth insisting upon the latter. The flashings too should be of copper, as only that material will approach the lasting qualities of the slate. Lead for counter flashing in certain locations can also be employed, provided it is heavy enough—and provided also that the users can guarantee its chemical properties. In passing it may be stated that the same thing is generally true of other modern metals, especially tin.

Let us next take up the question of roofing tile, another material as durable as, if not more so than slate, to which the same general statement as to flashing and nailing also applies, save that here copper nails are always the best without any question. The selection of tile for a roof should be undertaken only after the most careful consideration and thought, because it is much more difficult to secure it in the sizes and shapes best suited to buildings of various types or sizes. Whereas slates come commercially of a size that is immediately available for the ordinary dwelling, this is not true of tile, which is generally made overlarge and so crude in scale as to prohibit being used on the small structure. A tile generally known as "shingle tile" has the smallest texture of unit when used upon the roof of the small house, and yet these tiles happen to be generally among the most expensive to lay and buy, and also—on acount of their construction—among the most difficult to take out and replace when such an act becomes necessary or advisable. The beauty of the old tile roofs in Spain, Italy and France comes from the wide variety of color; often the tiles are as yellow as the strongest ochre pigments. At other times they are the pur-

plish red of ox blood and they run the entire variety of shades in between, pinks, oranges, light red, dark red, browns of all shades, and often all these colors may be found upon the same roof. Without going into the question of the trade names of the various shapes of tile—which it might be stated are always those that do not suggest the history or original purpose of the tile—there is a tile used in Italy and Spain, for instance, which in section is an "S" shape. When laid upon the roof this gives a number of gutters which run up and down the slope separated by some swelling curving ridges in between. In these countries these tiles are sufficiently tight to suit the purpose of the inhabitants. But roofs in these countries do not have to withstand the vigorous winters that occur in the northern part of this continent; and the old tile roofs are rendered considerably tighter than is possible in new construction by the large deposits of dirt and debris that cumber the roof, both on top of and beneath the tile, left there during years of its age. Various other details, many of which are too technical to undertake to explain in an article of this sort, also account for the difference in appearance between the old Spanish-Italian roofs and their modern imitations. The old tiles were of an irregularity of shape that would not be accepted by any owner of a modern house. Where, for instance, in the S-shaped tiles, the ends of the tiles were left open on the eaves to catch an irregular waving line of shadow along the gutter, often modern tiles, imitating them in shape, carefully fill up this space as to lose much of the sparkle and brilliancy that gave the effect of the original. When irregularity of color is desired, the contrary is often obtained at considerable expense by artificial process of spraying, that is about as unsatisfactory as can be imagined.

Tile should never be employed on a house with walls clap-boarded, or shingled in wood, as it invariably appears over heavy for the construction beneath. On a plaster house it seems more possible. On a brick, cement or stone house this material is always appropriate, provided that a proper scale is kept in mind from the beginning, and insisted upon by the designer. As a rule, the rough Spanish or Italian shapes are crude and large for any house except one of unusual size; and the ridges and lines they form along the roof are much more "nervous" than the simple horizontal emphasis to be obtained by the use of shingle tile, or some of the larger plain flat shapes that are made.

Abroad, tiling is laid up in all sorts of various ways, with lines sloping diagonally up and down the roof, around curving valleys and cheeks of dormers, and over rolling roof ridges. This sort of work is particularly to be found in Germany, northern Italy, and some of the old Austrian work; and modern German craftsmen are beginning to revive these picturesque, irregular methods of tile-laying.



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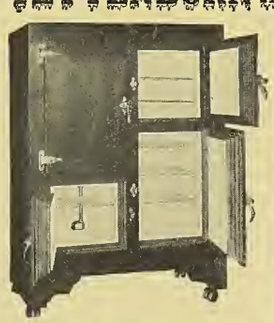
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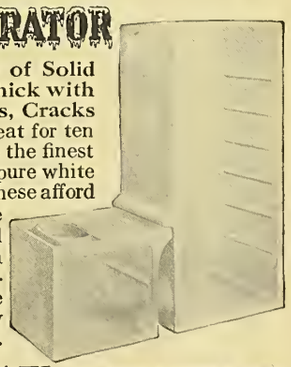
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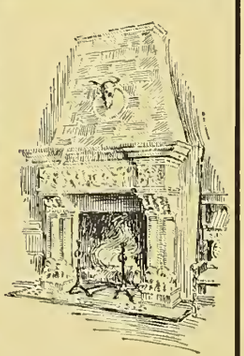
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It seems unnecessary at this time to discuss the question of metal tile. These merely imitate the real tile shapes and, except where particular copper color tones impossible to be obtained in tile are desired as a part of the color-scheme, there seems little reason to advocate their use. Under most conditions they are more expensive, and have not the permanency of the true tile—although, of course, the life of the roof should exceed more than one generation. They can in some cases also be obtained in slightly smaller sizes, giving a different scale from the clay shapes, but the variety of color that makes the beauty of clay-burned production is not to be obtained in the metal units. It should be stated that tile can be manufactured with glazed or dull color in combinations that, particularly in a dull soft green, are sometimes very attractive.

We come now to the asbestos shingle and other productions of that type, of which a great many are now being manufactured in different sections of the country. The chief advantage is in the fireproof qualities and lack of weight. The same considerations apply as were spoken of in regard to slate. Variety in color should be sought if possible, and the units should be laid to get the effect of texture as spoken of in the same connection. Look for the thickest types.

For flat roofs, in country locations, near the seashore or away from those centres where tar and gravel materials and workmen skilled in their application can easily be obtained or transported, canvas roofing, duck of proper thickness and properly laid, makes an excellent flat roof. It has the advantage of permitting people to walk over it at will without injury to the material, but it does require to be kept painted regularly every season. The duck has to be heavy and closely woven, and in most sections it is best laid after being slightly dampened with water put on with a broom. Opinions vary as to the desirability of painting the roof upon which it goes first and laying it while damp and while the paint is fresh. It has to be securely nailed with large headed nails every inch or so along the joints, and the joints are better when the nailing is put on under the material and the canvas turned over so as to remove any possibility of leakage. Care must also be taken to nail thoroughly on both sides of hip or valleys and where it comes up against a different slope of roof or wall, so as to prevent the shrinkage of the material from pulling it clear from these points. One method of insuring repainting is to use red lead for next to the last coat, as a lighter coat of paint put on over this shows the red paint through as soon as it begins to wear off, so making it apparent that the application of another coating is immediately necessary. Tar and gravel (or slag), 4-ply, makes a good covering for flat decks which are not to be too much walked on. In the city it is not too expensive; but in distant city suburbs its cost on dwellings is frequently prohibitive. It is a well-known

construction, in general use throughout the country, and should need no particular description here.

Other methods of flat roofing are either too costly to come within the purse of the ordinary home-builder or are so little in general use as to require no especial mention here. Technical or trade names have also been avoided in order not to confuse the casual reader. Neither have any statements as to the exact costs of roofing in the various materials been made. This was intentional, as such statements are both confusing and misleading. Costs of materials and labor vary in different localities, while always the design and arrangement of the roof are tremendous factors in the expense of the roof covering. Steep slopes, irregular ridges, many dormers or chimneys, much valley and hip cutting, all add considerably to the cost "per square" of different kinds of roofing. The different metals specified for flashing—and the various amounts required on different roofs—and nailing, make further variations in these prices, so that a cost given for covering "a square" (i. e., 100 square feet, an area ten feet by ten) of roofing, without ridges, valleys, dormers, and other details inseparable from actual construction, bears little relation to costs under practical working conditions.

For such information the owner should consult his architect, contractor, or both. The practical advice of either can give him more information applicable to his own particular problem in five minutes than he can get from books in five hours. In this article I have attempted to set down those certain consideration that will assist the owner to determine in his own mind the kind of roof best suited to his house or its location. If this article may cause the reader to regard the next few roofs he passes with a "seeing eye," it will have started within that reader the beginnings of a questioning mind, that should ultimately lead to his becoming a more intelligent critic in color and materials.

An Experience with Elder Bushes

THE most interesting matter I find in garden magazines of wide circulation is the vastly differing experiences people have to record in different sections, with the same variety of plants. One writer describes an arrangement of plants in a hardy border in some part of Wisconsin. Her background was formed of twelve or fifteen large shrubs of "elder—with its creamy blossoms, and later, great clusters of berries." Now, I wonder how our Wisconsin friends persuade the elder to keep its place as a shrubby background? Do they know the noble art of dwarfing in Wisconsin as well as in Japan that they can persuade their plants to "stay put"?

Two years and two months ago a neighbor bought and started to build up a new place. This place was bare of any growth, excepting one elder shrub growing on the bank of a wide creek, which bordered one side of the place. This shrub or small tree was probably two years old from

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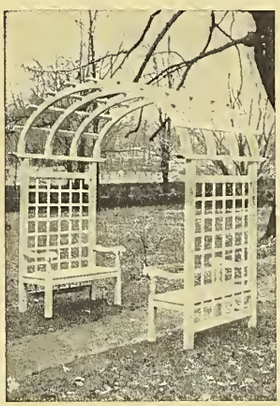
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seed. The following year it was large enough to afford considerable shade through the warm season, loaded with blossoms and berries. This summer they built a heavy framework to support the branches which formed a beautiful natural arbor with abundant room for seats and hammock. Twelve or fifteen elder shrubs here would soon take the garden in more ways than one, as the roots must be reckoned with as well as the tops. In fact, a creek bank is the only place for them, as the roots will follow the sewer pipes for fifty feet, often twining round and breaking the pipes. They are found growing all along the creek beds—their natural location, as the roots are hunting for water.

The Chinese elder grows easily here in California, and would anywhere, perhaps, and is not quite in such a hurry; but still it is a tree. The blossom is of immense size, and individual flowers are much larger than the American elder blossom. The foliage is somewhat different, the leaves being more or less streaked yellow.

E. A. S., San José, Cal.

Filmy Ferns

THE term "filmy ferns" is applied by horticulturists to a section of the great fern family of which the species of *trichomanes,* the *todeas* and the *hymenophyllum* are the principal members. These dainty ferns have fronds or leaves of a very thin and translucent texture, and are often very finely cut or divided, and these two characteristics give to them a peculiar grace and beauty. Another natural characteristic running through the group is their love for ample moisture and cool and grateful shade. Some few kinds from the tropical regions, both east and west, like a warm temperature; but by far the larger number of kinds may be grown in a close greenhouse from which frost is merely excluded. A low and rather flat-roofed house partly below ground level and facing north, is an ideal spot for their cultivation. A lean-to house with a wall backing south and extending above the highest part of the glass roof, is also an advantage. A flow and return hot water pipe is all that is desirable in the way of heating, and this should be arranged so that the heat can be turned on during the severe weather only. Collections of these, the most exquisitely cool and refreshing of all the fern family, are now grown in nearly all botanical gardens, and in many private gardens as well.

These ferns may be grown in peat fibre in pots or pans on the dead trunks of tree ferns or blocks of red sandstone. After all, the main point in filmy fern culture is the equable atmosphere of the house, which must be moisture-laden and close, *i. e.,* not too freely ventilated. If a house is totally unheated—as is sometimes the case,—then it is well not to open the door even during severe frost, but leave it closed until after a thaw has occurred. It is also necessary to damp down the plants and the floor and walls of the house before

frost is expected, so as to counteract the ultra-drying effect that frost produces. The drought caused by extreme cold is more fatal in its effects on filmy ferns and many other plants than is the drought of hot, dry weather, and must enjoy a water saturated atmosphere.

It need not be thought that these dainty plants can be grown only in botanical or other well-equipped gardens, since even amateurs, poor as well as rich, have grown them perfectly, and often under many difficulties and by means of many makeshift means. A late eminent surgeon had a very beautiful collection in his London, England, residence, some in window-cases, others under bell glasses, and some of the hardier kinds in coldframes in a little open-air yard. It was a pleasant privilege to see the owner and hear him speak of his beloved ferns and their history. In Edinburgh I once visited a collection of these plants grown by a postman named Anderson, who took great delight in them, and who grew them under cases and bell glasses in his house, and in frames and tubs or in barrels sunk in his little garden. Not only did he grow the common kinds, but even the rarest of cool growing forms, and he increased his stock by exchange with other growers, and even botanical gardens.

The most common of all the filmy ferns is the Killarney fern, so called because once abundant there and in the south of Ireland, although found in other parts of the world as well. This is *Trichomanes radicans,* and is very often seen in wardian cases or under glass shades in shady rooms or windows all over the country. The other two kinds are the wild wedding ferns or *hymenophyllums,* viz., *H. tunbridgense* and a form of it known as *H. unilaterale* or *H. Wilsonii.* Other filmy ferns are found pretty nearly all over the world, from the Canaries and Madeira to the East and West, and some of the largest and most beautiful are the tree or tall stemmed *todeas* from New Zealand. *T. superba,* sometimes called the ostrich feather fern, is one of the largest and most handsome of all when seen at its best. It is, moreover, very easily grown, and its spreading fronds are of the most exquisite texture. Other of these tree stemmed kinds are *T. pellucida, T. intermedia, T. Fraseri* and the rare *T. Wilksiana.* One of the most handsome of all the trichomanes is *T. pluma,* an epiphyte on the highest mountains of Borneo, where the trees are dripping with condensed moisture from the clouds. It resembles a small drooping *todea* in habit, but it is not at present in cultivation. *T. trichodeum* is of much finer tenuity and texture, and is far more suitable for a cool and cold fernery. For contrast with the last one may grow the kidney-shaped *T. reniforme,* which is an exquisite plant found wild on the moisture-laden rocks and tree trunks of the gullies in New Zealand.

One of the most hardy and free-growing of the exotic filmy ferns is *Hymenophyllum demissum,* which resembles the

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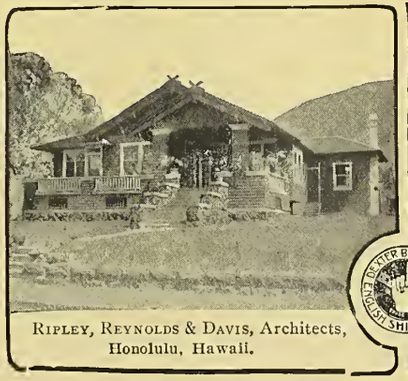
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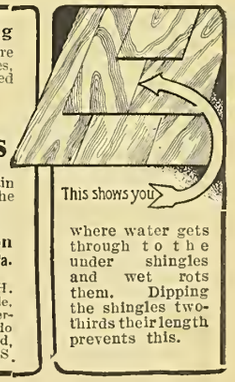
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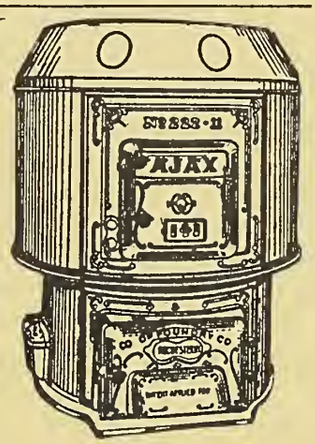
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Killarney fern in habit, but is more finely cut, and more pendent in its growth. For beginners this last or the Killarney fern is the best to begin with, as they are both hardy and free-growers. If these can be managed as planted in a little living sphagnum moss and peat fibre, on either tufa blocks or pieces of sandstone under a bell glass, or in a wardian case, then *T. reniforme* and others of the rarer sorts may be tried. It is, as someone has said, like a cool and refreshing mental salad to see a house full of these plants, or a bit of Killarney fern in a case even, after seeing a flower garden full of color on a hot summer day. Some people may laugh and say that ferns in cases remind them of birds in cages, but how much pleasure would be lost to us by neglecting either the birds or the ferns. The abovementioned surgeon loved his ferns, but he found that their beauty found a higher purpose. His waiting and consulting rooms always looked cool and peaceful, as the emerald glints came from the windows and corners in which his ferns thrived so well. "I feel quite certain," he once told me, "that my ferns do more to refresh and calm my patients than any other plants, even if not anything else could do, and to me they are an ever-abiding comfort and consolation throughout the whole year." W. R. GILBERT

The Leopard Moth

MEN obliged to climb trees should be cautioned to use extreme care when on the upper branches. This caution is very necessary, for during the past few years great inroads have been made on the vitality of trees by the many pests that have attacked them. Particularly to be feared are the trees where the leopard moth has been or is working. This pest is doing an incalculable amount of damage in all kinds of trees, and the range of his ravages is wide and still extending. If it continues at the same rate in the future as in the past, trees will disappear by thousands. Very small branches infested by this pest very soon die, but when in large limbs there is nothing on the exterior to indicate his presence, or the dangerous condition of the wood within, which may be thoroughly honeycombed and ready to break under the first strain. Where this is cause for suspicion all trimming work should be done from a ladder. There are a couple of very handy implements that should be used when working this way. One is a long pole with a strong hook on the end. With this the smaller branches in which there are borers can be broken off. They will break with but little strain. The other tool is the blade of a saw fastened on a pole. To make this split the pole at the end the length of the saw, insert the blade and fasten with rivets. While standing on a ladder very effective work can be done with this even on large limbs.

The leopard moth is more to be dreaded than many other pests from the fact that there seems to be no effective way to han-

dle him. The moth itself does not feed on the leaves of the tree, nor does the borer feed on anything other than the tree it attacks. Arsenical poisons are therefore useless. To destroy him in his burrows is almost an impossible undertaking in any but small trees. Where large trees are infested little can be done to save them. Their life may be prolonged by cutting back and keeping the dead wood out, but the result will be the same in the end. They had better be cut down. This may seem like brutally negative encouragement, but if there is anyone that can suggest something better I for one would hail it with rejoicings. When it is considered that a full-sized borer is about three inches long and about as thick as a lead pencil, and that there may be hundreds of them in a large tree, almost before being suspected, something of the condition of such a tree can be imagined.

This pest remains in the tree for two seasons, growing from a tiny thing to the full size as mentioned above, all the time boring out fanciful shapes in all directions until the period arrives for him to change and emerge from the tree, ready to do more damage.

If you have small trees, just watch them. Where small patches of sawdust-like borings show, you can be sure of a borer. Kill him by inserting a wire or fill the hole with a little bisulphide of carbon and then live in hopes that nature will step in and help to control the pest.

L. J. DOOGUE

The 1912 Report of the Secretary of the Department of Agriculture

THE Annual Report of the Secretary of the Department of Agriculture has once more reached us, with its usual abundance of interesting reading. The growth which the Department has made in the sixteen years of Secretary Wilson's incumbency is a high tribute to that gentleman's zeal and ability. To quote from the report: "During sixteen years it has progressed from the kindergarten through the primary, middle and upper grades of development, until now it has a thousand tongues that speak with authority."

We have no space to quote as fully as we would wish, but the following excerpts will give some idea of the tremendous scope of the Department's activities.

REARING FUR BEARERS

There are extensive regions in the United States well adapted to fox farming and kindred industries, and the rearing of fur-bearing animals for their pelts continues to be a subject of much interest, as is shown by the many inquiries from various parts of the country asking for information on the subject. Skunks, muskrats, mink, and foxes are reared in captivity or on preserves under control of breeders. The great demand for breeding animals and the reluctance with which successful breeders part with their stock of black foxes have caused large prices to be asked for mature animals, prevent-



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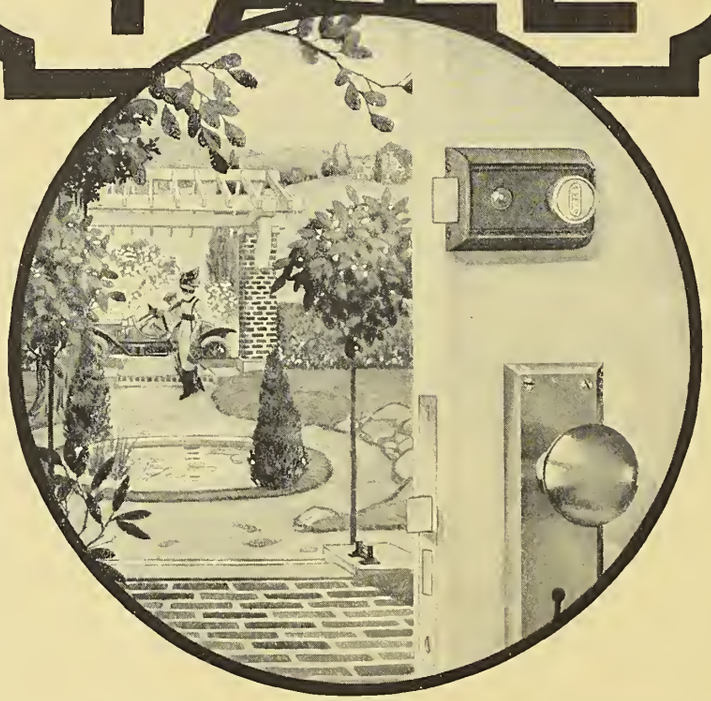
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ing the business from becoming general, and confining the industry in the hands of a very few.

Comparatively few attempts to raise mink have been made in the United States, and but little is known on the subject. But at from $3 to $8 for first-class pelts, the present prices, which are not likely to diminish, the raising of these animals should be remunerative, especially in connection with some other established business, such as poultry raising, orcharding, or truck growing; therefore, in co-operation with the National Zoological Park, steps have been taken to experiment with these animals with a view to determining the most successful methods of rearing them.

Muskrat farming is already a prosperous business, and has probably reached its highest point of development on the Eastern Shore of Maryland, although followed in other sections of the country. Muskrat marshes are worth more, measured by the actual income from them, than cultivated farms of like acreage in the same vicinity. The marshes need only to be protected from poaching, as the muskrats feed on the roots of the reeds and marsh grass, and the rental to the trappers is usually for half the fur, leaving the meat as an additional source of gain to them. Only one other animal in the world, the European rabbit, exceeds the muskrat in the number of skins marketed.

RODENTS IN RELATION TO AGRICULTURE

Prairie dogs, ground squirrels, and gophers are very destructive rodents, inflicting large damage and levying a heavy tax upon the tillers of the soil; therefore the Biological Survey conducts experiments with poison baits, traps, and other methods of extermination.

The daily forage consumed by 32 adult prairie dogs equals the amount required by a sheep, and 250 eat approximately as much as a cow. The ground squirrel, though smaller, is a voracious feeder, and the gophers, comparatively small, are not abstemious. As the region infested by these pests includes a number of Rocky Mountain States, California, and other Western States, and as some of the colonies occupy many thousand acres and aggregate millions of rodents, the extent of the damage they do to forage and other farm crops can be readily comprehended.

Besides, it has been definitely ascertained by the investigations of the past two years that the spotted-fever ticks, in the two younger stages, live almost wholly on small native rodents, and that the California ground squirrel has been infected with bubonic plague by fleas from rats, hence that these dread diseases are likely to become epidemic. Therefore there are two important reasons for attempting the extermination of the animals. The chief reliance for this is placed on the use of poisoned grain and other poisoned baits, but the use of traps, and, in some cases, the use of carbon bisulphid or pintsch oil in the burrows, supplements the poison. In these experiments oats have been found

to be the best vehicle for carrying poison, as it is readily eaten by the rodents and rarely by birds.

THE ECONOMIC RELATIONS OF BIRDS TO FARMING

Investigations by the bureau, in co-operation with the Bureau of Entomology, as to the relations of birds to the insect to determine what aid, if any, birds are likely to lend in checking the increase of the alfalfa weevil and retarding its spread, show that although the weevil has been established in this country only five or six years 31 species of birds have already learned to eat it. It is an interesting discovery that the English sparrow heads the list as a determined foe of the weevil, and that, if it is possible to utilize the services of the English sparrow against the formidable insect foe, the alfalfa weevil, it will be part compensation for the damage done by that bird in other sections.

Birds also prey upon the boll weevil while it is hibernating, while on the cotton plants, and during its autumnal migration flights—the period when the weevil chiefly extends its range.

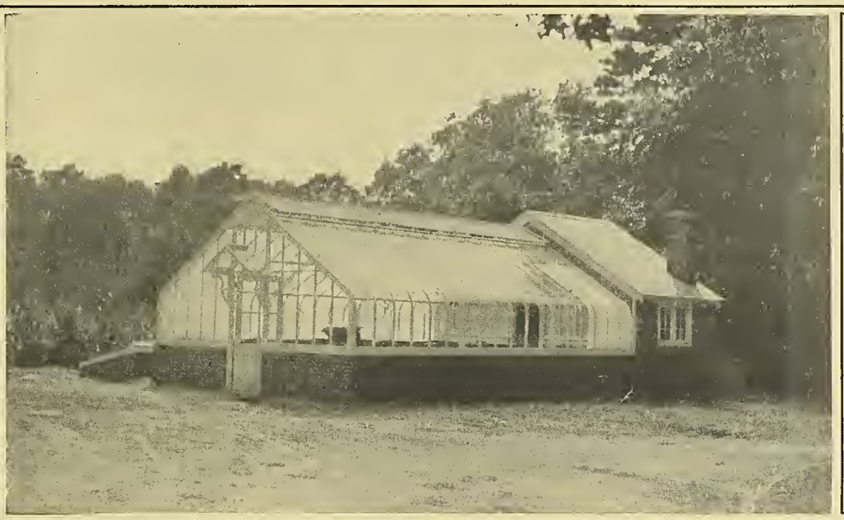
The Biological Survey, by making a careful analysis of the stomach contents of different species of birds, can show their relation to agriculture and horticulture, whether beneficial or injurious, and approximate the good or harm they do. The importance of this work is very great.

A Farmers' Bulletin entitled "Some Common Birds in Relation to Agriculture," which was issued many years ago, has always been in great demand, and over 500,000 copies have been distributed. In order to furnish additional literature along the same lines, two other Farmers' Bulletins on familiar species of birds have been prepared, one dealing with some common game, aquatic, and rapacious birds in relation to man, and the other treating of the common birds of forest, field, and garden.

DISTRIBUTION AND HABITS OF NATIVE MAMMALS AND BIRDS

The basis of most of the work is scientific investigation, and in this field the most notable accomplishments have been the systematic collection and publication of data regarding the distribution and habits of native mammals and birds, and the preparation of maps showing the natural life zones of the country. Each of these zones is especially adapted to the growth of special crops and marks the limits within which certain varieties of fruits and cereals produce the greatest yield or beyond which they are not likely to be commercially successful.

Maps showing the ranges of individual species have also been published, and have proved useful in co-operative work with the Public Health Service in outlining the range of mammals which carry the tick responsible for the deadly spotted fever in the Bitter Root Valley, Mont., and the area occupied by the ground squirrels in California which transmit bubonic plague.

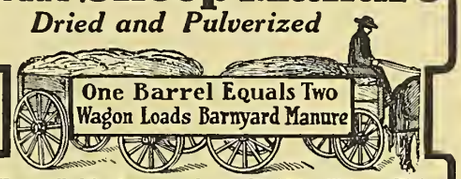


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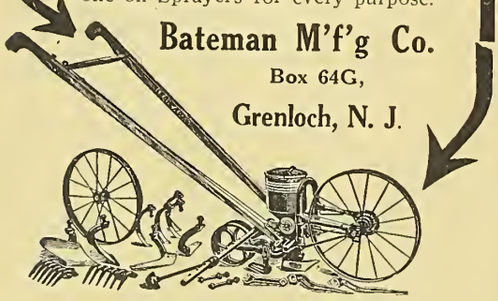
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Book Reviews

THE PARTY BOOK. By Winnifred Fales and Mary H. Northend. Crown Octavo. Illustrated. Boston: Little, Brown & Co. $2.00 net.

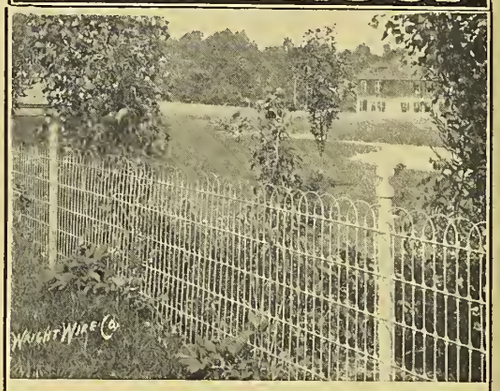
The same laws which govern the value of gifts apply to the worth of entertainments. Often the care and thought, the individuality projected into either a present or a party is directly proportionate to its appreciation. We ordinarily do not care so much for the luncheon or reception that is entirely the product of the caterer, however proficient he may be. Where the personality of the hostess is apparent, where we seem to see present her handiwork or her directing energies, we enjoy ourselves most.

This book is a directory to successful entertainments. It indicates the lines for artistic ability to work and gives a brief of the canons of good taste. The early chapters discuss the form of invitations, the correct setting of the table, the proper menu. Part two treats of table decoration appropriate for different occasions and fitted for various times. The table accessories, favors, etc., are well illustrated and quite suggestive. As of collateral interest a variety of appropriate dishes with their receipts is given. The last portion of the book gives numerous games, old and new, for the entertainment of both grown-up and little folks. An appendix furnishes valuable information for the convenience of the hostess in working out color schemes, the flowers of the month, for instance, anniversaries, holidays and the like.

THE ARCHITECTURE OF THE RENAISSANCE IN FRANCE: 1495-1880. By W. H. Ward, M. A. 2 Vols. Illustrated. Imported by Chas. Scribner's Sons, New York.

With the acknowledged influence of the Beaux Arts School of Architects in this country and the importance of their work recognized, this subject should be of particular interest to an American audience. There is no other book in English, or in French for that matter, that deals exclusively with the architecture of the Renaissance in France, so that there is a timely interest in these volumes. The author has traced the development in the architecture of France, whether of building or of decoration, from the reintroduction of classic forms at the Renaissance to the revival of the Gothic. The purpose of the book is to supply the student who is aware of classic influence in Italy during the Renaissance, with the development of thought and practice during this period mentioned. The difficulty that any author has in marking off periods of history is carefully met by showing not so much the architecture produced during a certain reign, but the development of style which culminated in

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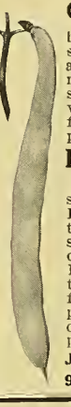
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that reign and by which the period was characterized. This is the best working basis, especially in France, because certain forms have been denominated by the names of rulers, and there would be confusion were a different division made, even though the dates separating the period were absolutely exact.

The work gives the chief facts concerning the styles of the period, and links up the history that bears upon it. Not only are facts given about the important buildings, but also of the architects prominent, and their relation with the social and literary history of the country is pointed out.

The book is illustrated by photographs of excellent detail, by drawings of existent buildings, together with plans and reproductions of those no longer standing.

Little Books about Old Furniture. Vol. III, The Period of Chippendale. Vol. IV, Hepplewhite, Sheraton, The Adams Brothers, Etc. By J. P. Blake. Frederick A. Stokes Company, New York.

These two volumes are an addition to a series intended to discuss the development of old furniture from Tudor to Georgian times. Previous volumes take up the subject of Elizabethan oak and its development into the Queen Anne period. These last carry the discussion from the time of Ince and Mayhew to the time of Sheraton and the Brothers Adam.

A discussion is given of the life and ideals of the author and of the various cabinet-makers dealt with and the ideals of their work. No chapter is given on the detection of fakes, since the author believes a knowledge of the best examples is a more successful way to avoid being imposed upon. The books show characteristic forms and are illustrated with helpful photographs and drawings.

Roads, Paths and Bridges. By L. W. Page. New York: Sturgis & Walton Company. 75 cents.

The importance of roadmaking is being discussed to-day and legislation is being urged by highway commission and good road society. This book, introducing the historical consideration of roads, adds another argument by no means to be neglected. It would be impossible to figure the importance of road-building in ancient times as a civilizing agent. The building of roads probably did more than the early missionary to break down the differences between tribes.

Mr. Page in his book should do much to awaken the interest of rural and suburban dwellers to the necessity of increased highway appropriations and modern highway legislation, and as his book is written in a clear, nontechnical manner there should be numerous practical suggestions for municipal boards as to the structure and maintenance of roads, and the incidental consideration of vital interest in this day of the automobile: dust laying.

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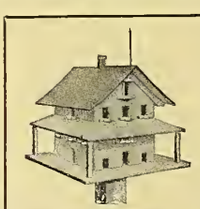
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By Allen W. Jackson

There have been various books published in England dealing with the early examples of what is known as the English half-timber type, and many of these have been eagerly seized upon by architects for the inspiration of their picturesque compositions and naive detail. It has remained, however, for an American architect to trace out in detail the various factors and influences that have gone into the making of this style in England and particularly its adaptability to present-day needs along the lines of the American country house. Mr. Jackson makes you know the half-timber house intimately — its idiosyncrasies, its charming irregularity of plan, its characteristic detail which the old builders made so often a labor of love. "Architects, builders, and homemakers will find it worth while." — *New York Times.*

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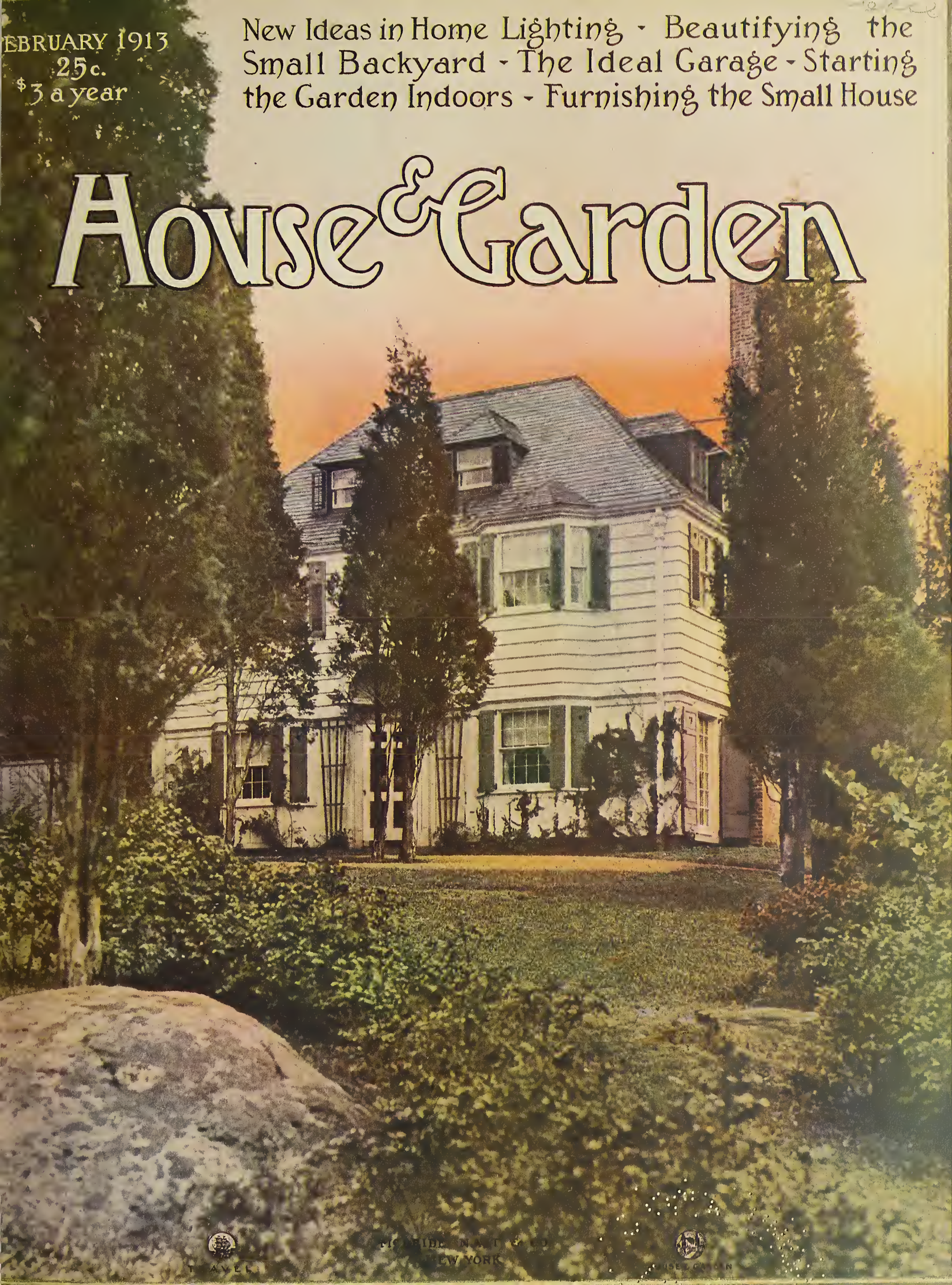
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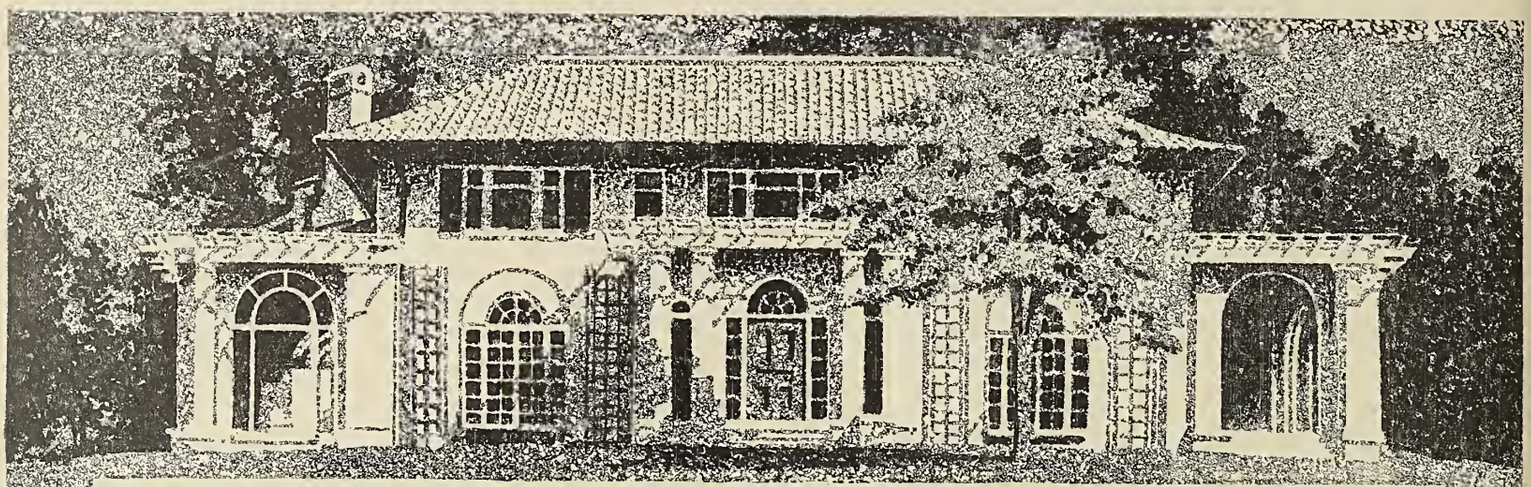
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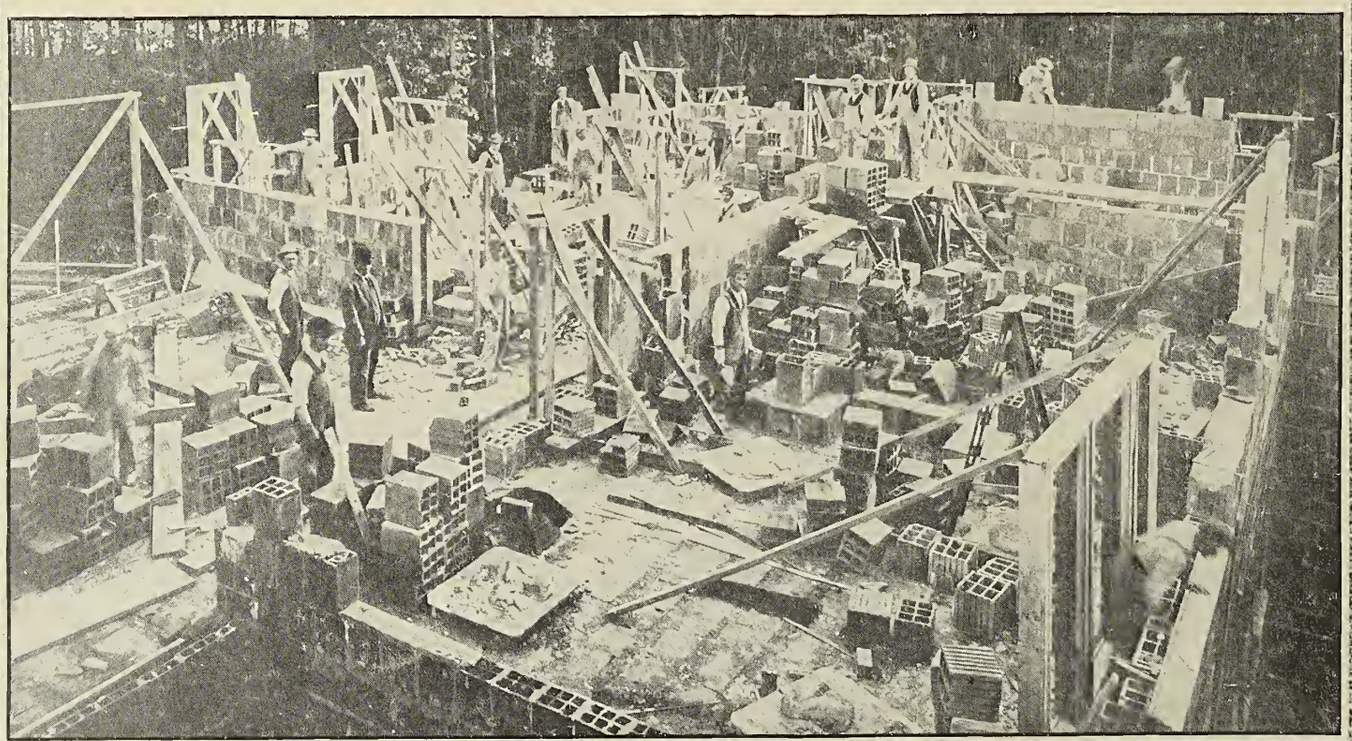
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The Country Club, one of the centers of social activity in Greenwich

tween Bridgeport and Stamford. The reciprocal entertainments of those who take their recreation in sailing, last not only during the summer when the visiting yacht clubs are received and the cruising vessels welcomed, but the gaiety continues even into winter. The social intercourse, however, is not limited to the yacht club and the water front. There is the country club and the field club that beyond serving as places of recreation and exercise, are used for dances and festivities for over the winter season.

So much for the public functions. The hospitality of Greenwich homes is now proverbial. The constant throng of week-end visitors is announced, the meeting of residents and the visiting of residents from house to house is characterized by entertainment of unusual distinction. Among the hundreds of attractive homes that are occupied by recently married couples the life is particularly interesting, and much informal, friendly fun is enjoyed. But there are the magnificent mansions besides, where society folk whose names are starred, dwell. This entertaining rivals the splendor of even a capital city. What is said of Greenwich is only true of many places that dot the outskirts of the metropolitan district.

We spoke of transportation facilities, and it is worthy of remark that the Long Island Railroad intends opening its Port Washington division for electrically operated trains on February 22nd, 1913. This makes still more accessible that section of Long Island which runs from the Brooklyn city limits out along the north shore to Port Washington and renders it all the more attractive. This opens a uniformly desirable district for the home of moderate cost, and brings this section into a zone equivalent with up-town New York.

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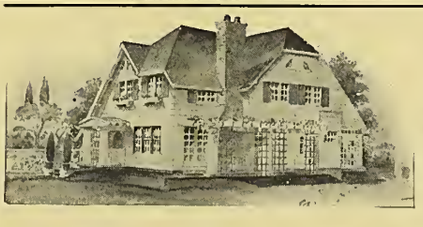
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Chicks that appear droopy and peevish are often lice-infested. With young chicks results are fatal unless the trouble is remedied. Lice will work into the ears and nostrils of newly-hatched chicks, causing their death in a few hours.

Examine the hens frequently for lice, looking under the wings and about the vent. Intense redness of the skin indicates their presence even when they are not readily seen. The lice which infest poultry are very small, varying in color from white to reddish.

Small black fleas are also a great torture to fowls.

Roughened legs with the skin twisted and gnarled into thick, irregular scales, are due to the perch-mite, a small, red, spidery creature.

The lice make the hens their abiding place, and it is when they have bred to great numbers that they infest the nests and perches noticeably—a condition which soon develops in warm weather. With the perch-mite the case is a little different. The roost is their lurking place, the fowls being troubled at night. Therefore, while almost any drastic measures may be employed to cleanse the building, care must be used in dealing with the hens themselves.

Pyrethrum powder or flowers of sulphur puffed through the plumage of the bird with a bellows once a week will rid them of the pests.

To prevent their being re-infested, the quarters must be carefully treated. A very effective louse-killer in the form of a paint to be applied to roosts, drop-boards and nests is made of equal parts of tar and kerosene with carbolic acid in the proportion of one pint of pine tar, one pint of kerosene and one tablespoonful of carbolic acid. It is applied with a brush, and the abominable smell lasts a long time. The lice and other vermin cannot endure its fumes, and succumb while the fowls are roosting.

It is wiser to treat setting hens before the advent of the chicks, but when this has been neglected you will have to give the little things attention at once. When the hatch has been completed, lay a small piece of board, painted on both sides with the preparation, in the bottom of the coop and close it for about ten minutes. After this time remove the board and ventilate. After several hours repeat this.

Where the perch-mite is the only trouble, painting the roosts with kerosene

(*Continued on page* 86)

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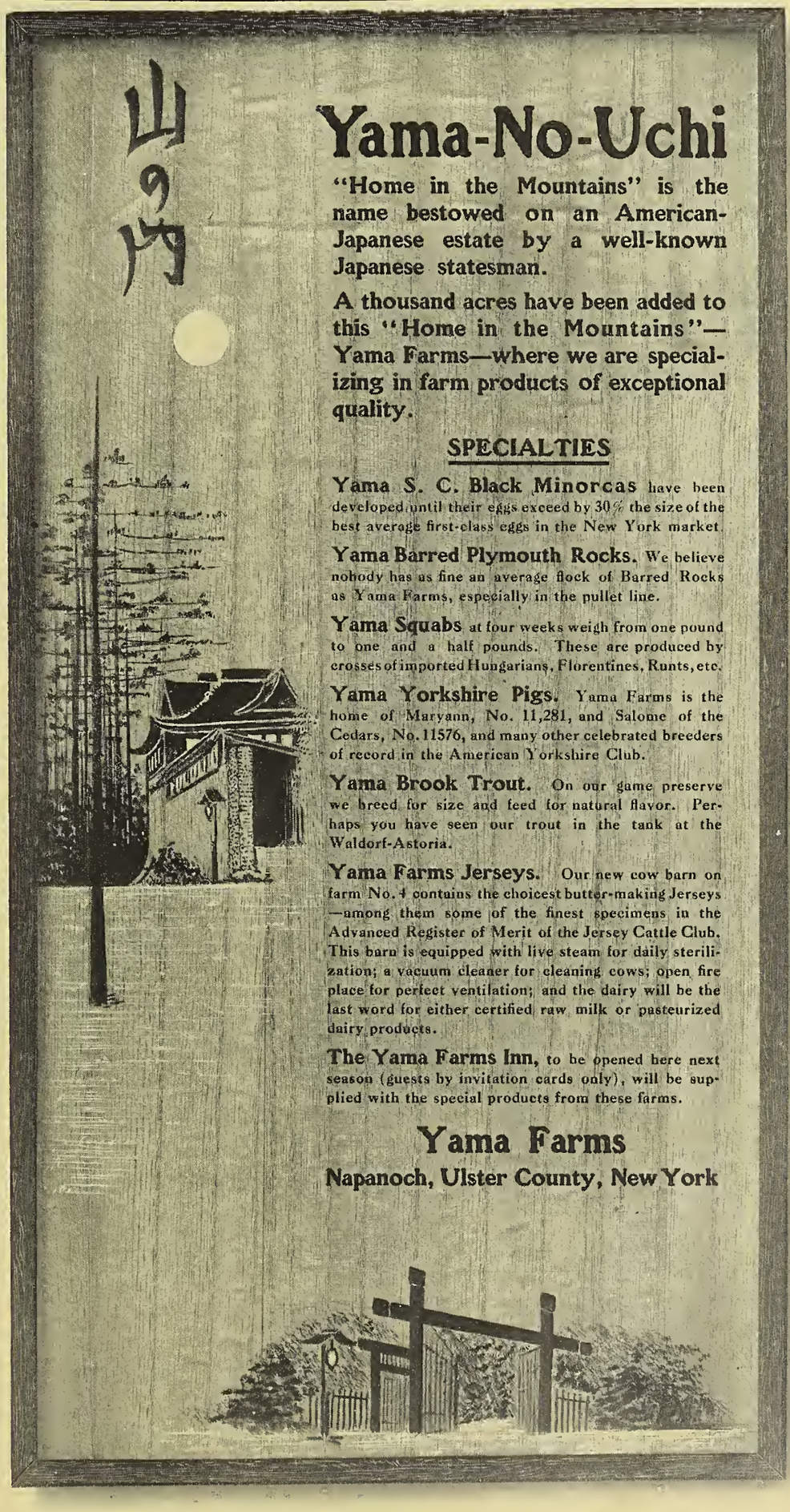
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(*Continued from page* 84)

and using a mixture of grease and sulphur, or kerosene and sulphur on the legs of the fowls is effectual.

Too much care cannot be exercised to keep your fowls free from insect pests. It is a subject that deserves constant watchfulness, especially during the summer months.

M. ROBERTS CONOVER

Training the Dog—VI

GRANTED an apt and willing pupil and a teacher whose heart is really in the work, the possibilities of teaching the dog to perform various tricks are almost unlimited. A certain amount of ingenuity on the part of the teacher, coupled with alertness in watching for and taking advantage of any peculiarities or mannerisms of the dog and developing them into regular accomplishments, will in very many cases lead to tricks which, in their originality and apparent evidence of logical reasoning, are far more effective than the ordinary run of things which the average dog is taught. Not that the familiar, time-worn tricks should be neglected; on the contrary, many of them are really desirable. But it is the new ones, the unique accomplishments, that open up the largest field to the ambitious trainer.

It is not my purpose here—nor, indeed, is it possible in any series of articles—to cover all the possibilities in what may be justly considered a subject separate and apart from the dog's strictly utilitarian education. But a fair selection of tricks will be described in their natural sequence, and suggestions made for a number of others; with these as a foundation, the rest is really dependent on teacher and pupil alone.

In the great majority of cases, it is unwise to attempt teaching your dog any of the so-called tricks until he has thoroughly mastered the lessons "come," "lie down" and "heel." Exceptions, of course, arise; for example, if a marked inclination to bring various objects to you is shown, it may be encouraged at once and developed until it becomes the commonly seen accomplishment "fetch." This, by the way, is an example of what I said above relative to taking advantage of your pupil's peculiarities. As a general thing, however, don't worry yourself and the dog by attempting anything of an "extra curriculum" nature, until the three essentials mentioned have been driven firmly home.

In taking up the actual teaching of tricks, it is as well to commence with that good old standby "sit up" or "beg." Take the dog to a corner of the room—a corner where two walls form a right angle—and placing him therein, kneel or sit on the floor before him. Now take one of the dog's front legs in each hand, holding them near his shoulders so as to avoid all possibility of his twisting away

(*Continued on page* 135)



LEND us your ears for a few minutes. We want to take you into our confidence about some of the books we have arranged to publish this spring. You know already what a reputation for dependability and interest our practical books have, so it is unnecessary to dilate on this side of the subject. We know pretty well what you think of them by the number you have purchased. You have bought thousands of those vade mecums—big term for a small book—of the house and the garden, the "Making" Books, and in announcing four new titles we have only to mention the names, which are as follows: "Making a Fireplace," "Making a Water Garden," "Making a Garage" and "Making and Furnishing Outdoor Rooms and Porches."

▲

Nearly everybody to-day, no matter what his or her vocation, is able to do something with the hands, is a craftsman in some manner. It may be gardening, photography, woodworking, leather carving, bookbinding, or any one of a dozen other useful diversions that train the hands to work as well as the mind. But whatever it is, there is one craft that is used in connection with so many others that it seems a necessity to have some knowledge of it if one would be successful. Charles E. Pellew, who was formerly Adjunct Professor of Chemistry at Columbia University, has written a book about this craft called "Dyes and Dyeing." His book is one of the "show how" kind, taking up all sorts of materials, such as feathers, basketry, leather, silks, cotton, woolen, etc.

Professor Pellew came in the other day and showed specimens of his own craftsmanship—exquisitely dyed silk scarfs, some of which were iridescent with soft colors that blended imperceptibly into one another, and others of one shade, shades that were so delicate that they could be described only by the word "delicious"— and they were!

▲

Chas. Edw. Hooper, who wrote another of our forthcoming books—"Reclaiming the Old House"—is very much wrapped up in his subject, and always has been, if we are to take seriously his remarks, made the other day to one of the editorial staff.

"It seems as if the most of my life was mixed up with the HOUSE. I was born in one. Either to cheat the relic hunters or to prevent the infection of my peculiar type of brain, the HOUSE was torn down soon after. It never had a chance to be reclaimed. Later, when I was whipped in the barn for running away, I flew to the HOUSE. When I had arrived at an age necessary to the successful dulling of saws, planes and other edge tools, I had need of the HOUSE again. When I was naughty (which was common), I was frequently kept in the HOUSE.

"When I began to acquire knowledge the often painful operation was performed in a school HOUSE. Seeing a drawing of St. Paul's, I decided that I would be an architect and began the attack on the HOUSE in earnest. I have moved all over New York from HOUSE to HOUSE. Why, the ordinary New Yorker will understand without being told.

"Finally I entered the employ of a publishing HOUSE. While there, I was delegated to persuade the late James J. Tissot that he was in urgent need of a new likeness. He refused to agree and politely offered an old photograph which dated back to the time when the visiting Germans very politely circumnavigated the Arch de Triomphe. Still I persisted and tracked him to his boarding HOUSE, at the corner of Fifth Avenue and Thirty-fourth Street, New York. Assisted by the elevator, I climbed into the great man's presence, hardly daring to hope for results. We conversed on generalities for a few moments, all of which time he was regarding me intently. Soon, with that delightful apologetic pantomime which only a Frenchman can render, he remarked: 'Pardon, Monsieur, but you have the Christ head.' Now as I'd been pestered nearly to death by my artist friends before and had almost posed as *Mr. Mephistopheles* and the *Ghost* in 'Macbeth,' I wasn't much surprised, and, further, I saw my advantage. 'Mr. Tissot," said I, 'there is a nice little photographic HOUSE over across the street where we can go and get both our pictures taken.' Of course he bit at that, and after we swapped caricatures, each went his way happy.

"Later, when I had discovered that a passing education in practical plumbing was fully as satisfactory as any knowledge of art to fill the editor's chair, I left the publishing HOUSE. Since then I have started to build a HOUSE of my own; and considering present conditions and my own uneasy temperament, I shall be always at work on that HOUSE."

▲

Ernest K. Coulter, author of "The Children in the Shadow," which will be published this month, helped to organize the New York Children's Court, and as Clerk served there for nearly ten years, during which time he saw one hundred thousand children arraigned. He has thoroughly investigated the case of the delinquent child, and in this book are the remarkable results of his labors. Congestion, according to Mr. Coulter, is responsible for the alarming criminality among children, and in tracing the blame for this congestion he finds it in the insufficient and inefficient laws relating to tenement houses. This, in turn, is the result of apathy on the part of that portion of the population that is silent as long as there is no personal application of these wrongs. The book is calculated to stir these people to a realization of what is their part in the situation. It is a dramatic but sane exposition of one of the most vital problems of the day.

▲

There are plenty of people nowadays who do not play "bridge," and the same may be said with reference to golf. Not that there is any connection between the two games, but it is a fact that many people who might otherwise take up golf are deterred from doing so because "it is pretty late in the day to begin." There is a book for just these people, "Golf for the Late Beginner," by Henry Hughes. Mr. Hughes himself took up the game after he had reached middle age, and with his experience fresh in mind explains the correct principles of golf in a way that is especially helpful to the late beginner.

▲

"Thorney" is a new novel by Alexander Black. Never mind what the title signifies—the story is about a desert island, a girl and a man. "There's nothing new about a desert island," say you. Ah, that is just the point! But there is something new about this story. Here in the office we have fallen in—well, you'll have a chance at it yourself soon.

▲

These few remarks cover only a fraction of the activities of our book department. There are books of travel, housebuilding books, biography, gardening books, and useful arts of other varieties; in fact, a well-rounded list.

▲

TRAVEL is for expansion. We have recently absorbed *The Tourist Magazine,* which was in a field similar to that of TRAVEL, and the magazine will now have the advantage of an increased circulation and a somewhat broader field. Next month there will be another important announcement in connection with TRAVEL. It will be on the same general scheme of expansion, but along somewhat different lines.



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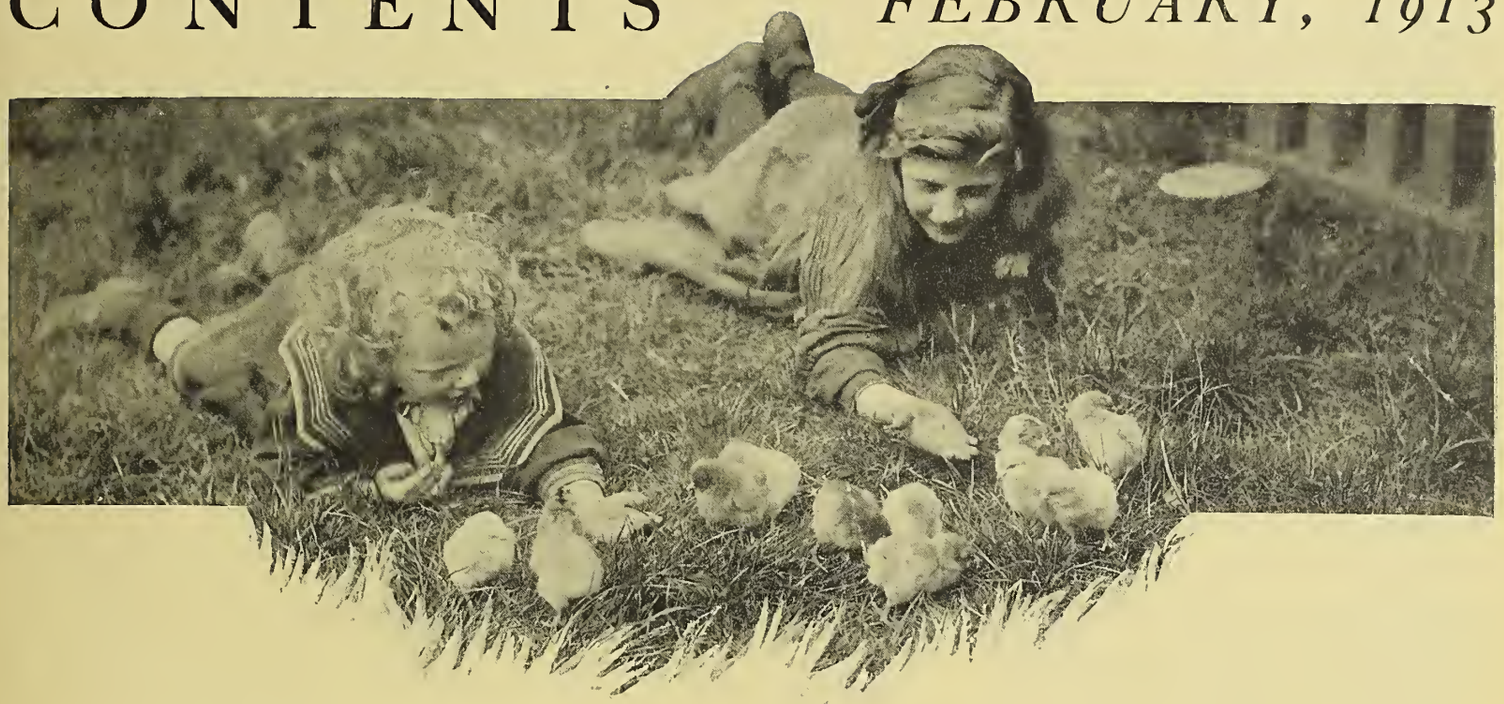
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Even a severe winter spent in a cabin perched among the snow-covered mountains is full of attraction. The magnificence of the winter woods, the thrill of tramps on snow shoe and ski, the comfortable evenings beside the broad fireplace, these are pleasures that are as appealing as are those of spring and summer

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In the winter wonderland sluggishly cutting its snake-like course through the drifts in the valley the stream made miniature avalanches and icebergs easily suggestive of the Titans of the north

Our Winter in the Happy Valley

BY A. W. DIMOCK

Photographs by Julian A. Dimock

"SUPPOSE we stay here all winter!" I remarked, as I gazed from the cabin window upon a snow-laden spruce.

"What, here in the mountains? We might be snowed in!"

"Yes, that's why," I replied.

"But what if we are sick and want a doctor?"

"That's why, too. If we can't get a doctor we won't be sick."

"What will we do for companions?"

"You will have—I mean *I* will have—the best there is."

"I told you it was time to take in our red apples, and now it is too late," was the irrelevant response.

"This snow is a month ahead of the calendar, but let's have a look at the tree."

We started for our orchard, wading through the unseasonable snow. The face of Nature had changed overnight and the dark sides of the mountain, only half hidden by the bare boughs and trunks of the forest, were now of a dazzling whiteness. The black caverns of the opposite cliff were lighted up by snowy masses clinging to its face. A turn in the path opened out to us the hardy little orchard. Our steps halted and we were silent as we gazed at our favorite tree. Its very branchlet curved downward with the weight of the snow; the larger limbs were piled high. As we stood spellbound, the late-rising sun lit up scores of rosy-cheeked apples resting on their snowy couch, while a robin perched upon a white twig added his song to the anachronism. At sight of us the bird flew away, perchance to prepare for his southern flight, while the girl at my side following him



Winter is chill but alluring



What automobile trip can compare with the jolted progress through the snow-filled valleys in an ox-drawn sled

with her eyes stood silent for an instant, then quoted:

"'—Or the redbreast sit and sing,
Betwixt the tufts of snow on the bare branch
Of mossy apple tree.'"

Feeling that the psychological moment had come, I quoted in turn,—

"Shall—'we leave the town with its hundred noises,
For woodland quiet and silvery voices?'"

As no reply was forthcoming to this I continued coaxingly,

"Won't you brave the winter with me?"

I don't know to this hour what the decision would have been had the lady been left to herself, but a bunch of cheery chickadees, scattering the snow from the twigs of a nearby sapling as they hopped about, chipped in with their merry "Chick-a-dee-dee-dee-dee!"

Then my hand was taken as I listened to words that came from laughing lips, though in trembling tones:

"'Then come the wild weather, come sleet and come snow,
We'll stand by each other however it blow.'"

And thus began our winter in the Happy Valley. The first snow melted in forty-eight hours, to the heightened brawling of the mountain brooks and the increased roar of the cascades about us, and the Indian summer days came back, when again we wandered afield with knapsacks on our backs to visit our favorite butternut, hickory and chestnut trees. The gray squirrels knew that we carried no guns and barked at us fearlessly, while the reds chuckled and trilled in their funny fashion from over our heads as they robbed our trees. As the mornings became colder and ice began to show on the borders of the streams, our walks became brisker and we climbed the nearby heights from which we looked upon the tops of snow-crowned mountains, some of them forty miles away. On the warmer days we wandered slowly and silently near the stream, watching for the mink that often appeared, and once we were rewarded by the sight of an otter which displayed himself for a full minute while we held our breath. Sometimes we took after-dark walks, which were never lacking in thrill, for the mountains have voices and there are always sounds in the forest. A heavy step in the thicket on the hillside near you may be any wild creature your imagination fancies.

It was a month after our untimely snow when there came a rain followed by a freezing night which made the face of the forest a mass of sunlight-reflected jewels. All nature was coated with the purest ice, from the rough crag to the tinest twig, and as the branches swayed slightly in the gentle breeze the colors of the spectrum flashed from a million points and sparkling tiaras met the eye wherever it turned. As the breeze increased the air was filled with a tinkling sound and from the lighter twigs streams of scintilating particles poured down upon a field of ice. As we looked the girl at my side in a low tone quoted:

"'Look! the mossy trunks,
Are cased in the pure crystal; each light spray,
Nodding and tinkling in the breath of heaven,
Is studded with its trembling water drops.'"

"Wasn't it worth while staying in the mountains just for this?" I asked.

"It is worth everything!" she exclaimed, "and I am going to write to the girls to come right up here."

A few days later I received the following:

"Dear Uncle Archie:

Aunt Lucy is a peach and a darling and so are you. Of course we will be with you for the holidays, Marian and I, and I hope to goodness it will snow so hard that we can't get away until spring. Please see that the snowshoes are properly greased for Marian, if that's what ought to be done, and have the skis sharpened for me, if that's what happens to them. Don't send to the station for us. It's only twelve miles and we will walk in. We did a hike of ten miles last summer and we can do two more, easy. Then we will show you how to eat supper.

"Your loving niece, Madge."



All kinds of gruesome monsters appear among the rocks where snow and shadow form strange profiles and distorted faces

"P. S. For the love of Mike, don't tell Mother that we are going to walk in, or she would put the kibosh on the whole business. Perhaps you had better not show this letter to Aunt Lucy. I can trust you, but there is no telling what she might write to Mother."

"See here," said I to the lady to whom I had just read the foregoing, "something must be done to keep those wild nieces of yours from tramping twelve miles through the snow."

"Don't worry. They'll never try it."

Two days before Christmas a heavy snow-fall made the trip through the mountain pass from Shokan, the nearest station, impracticable, and the only way for the girls to reach us was from the west, by another road and a drive of more than twenty miles.

"I am afraid this snow has spoiled your Christmas," said I to the lady as we sat by the fire on Christmas Eve, near the hour when St. Nick was due to come down the chimney. "I know how anxious you were for the girls to get here and I wanted to see them myself."

"Don't worry, for you'll see them, all right. Those youngsters will be along tomorrow. Of course, they can't get through the Gulf, but they will go around by way of Ellenville and find some one who will get them through the drifts on that side. You will hear their sleigh bells before sunset tomorrow."

"I'll be jiggered if I don't hear something like them now."

"I hear it, too, but it is coming from Shokan way. I wonder who it can be."

We didn't wonder long, for there were voices as well as bells and a clattering at the door which burst open to give tumultuous entrance to four fur-clad, snow-covered young people. The first girl to get inside greeted me with an enthusiasm that left me snow-covered and near-breathless.



After long tramps on ski and snow shoe even the slow going ox team is acceptable to carry one home



The face of nature is changed over night and beyond the snow laden spruce the once bare boughs and trunks of the forest show a dazzling whiteness

"How your many admirers would envy me now, Marian, if they only knew."

"It wouldn't do them any good, but who told you that I had any?"

"I heard that you rolled up a dozen victims at the seashore last summer."

"Somebody has slandered me, Uncle Archie. I don't think there were more than six," said the child, sadly, but she brightened up as she added, "I don't remember that any got away, though."

When the confusion had partially subsided I thought of my responsibility for the bunch of youngsters in my house, and I began by upbraiding the man who had brought them in.

"What made you take the risk of—"

"Couldn't help it," said he, interrupting. "They was jist bent on comin', and if I hadn't fetched 'em they'd 'a' tried it afoot, and you wouldn't 'a' liked—"

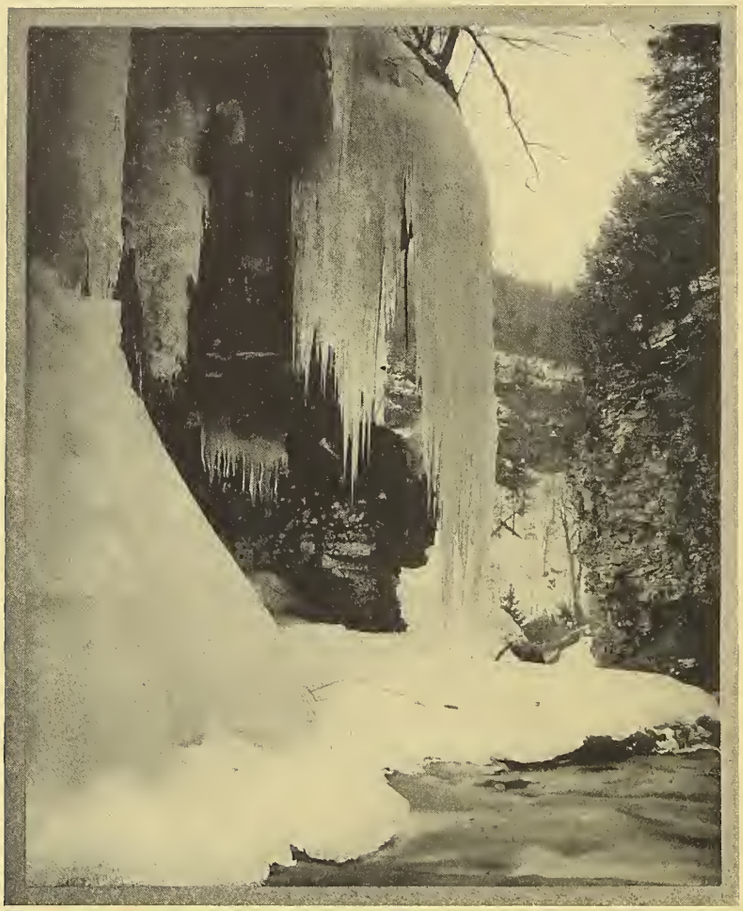
"It wasn't his fault a bit," interposed Madge, "for we told him it was so important for us to get through that we would have to walk if he wouldn't take us. We were afraid that if we didn't get here tonight Aunt Lucy would be worried."

"We didn't think you *could* get through," said that lady. "You must have been eight hours driving in. First you must have some supper and then you must tell us what happened to you in the Gulf."

"We are the hungriest ever, and would all die of starvation before morning, but if you don't cross your heart and promise to stay in this room while we get our own supper, we won't eat a mouthful and our blood will be on your hands, and so say we all of us."

"That's so," added Marian. "We are agreed on that. Madge has taken a course in domestic science and wants to try it on the dog. She can fricassee a meringue, or casserole a truffle, but she can't boil a potato. Then Jack, he's too stuck up to live just because he was camp cook last summer."

So the jolly four, Marian and Madge, Jack and his college chum, Harry Forsyth, an amateur photographer of parts, got the supper. When the long-drawn-out



Winter's magic transformed the grotto into a crystal cave of fairyland, covering its entrance with silver stalactites

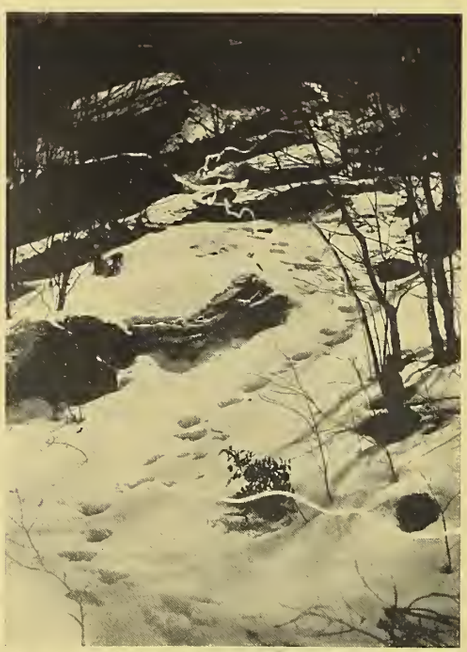


The sparkling water pours from the dark cavern forming tier upon tier of flashing icicles as it plunges downward

meal was ended, we sat around the library table with cheese and coffee, butternuts, apples and cider, while Harry recited his epic on the Passage of the Gulf. He pictured Scylla in one of the caves of the precipice on the north side of the narrow passage and likened the projecting tree trunks to the long necks of the snaky monster, while the chasm on the south side proclaimed itself Charybdis. The drifts which they encountered were treated as dragons and the shovels with which they were reduced were accounted spears and javelins. There were interruptions at first by his fellow-voyagers, who fancied the narrator had forgotten something, but later all sat in silent admiration of his imagination. When the story was finished and the applause had subsided, Marian demurely inquired:

"Did you recite the whole of Virgil, Mr. Forsyth?"

"All I could remember, and then some," was the prompt reply.



In a moonlight photograph the lantern made a snaky trail, but, strangely enough, the bearer's form was wholly invisible

The hours of a winter's day in the Happy Valley are so few and so precious that it is our custom to breakfast at daylight. Yet when I came down to that meal the next morning I found Marian and Harry in the library studying out the mystery of an Indian snowshoe knot.

"Where are the other infants?" I inquired.

"Madge says she can stand up longer on skis than Jack, and they are having a contest to prove it."

When they came in to breakfast a little later their appearance indicated that neither of them had succeeded in standing up at all. More snow had fallen during the night, of the powdery, blowy kind, with which the north wind playing:

"Curves his white bastions with projected roof,
Round every windward stake, or tree or door."

"It snowed a lot, last night, didn't it?" inquired Marian, between bites of her buckwheat cakes.

"Yes, young woman," I replied, "and that Gulf you came through last night is closed for the winter."

"Hurrah!" exclaimed the child, laying down her fork to clap her hands. "Then I can stay here for three months!"

"How do people know when the Gulf is open so that they can get through?" inquired Harry.

"They don't. The first to try it last spring got into trouble. It was the middle of March when a man came to the cabin to borrow a shovel to dig his horse and sleigh out of drifts. He had started with his wife from Shokan in a sleigh. Half way through the Gulf he abandoned the sleigh. A little farther along the horse stuck in a drift. I don't know where he left his wife. Probably somewhere

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The Vital Functions of Light in the Home

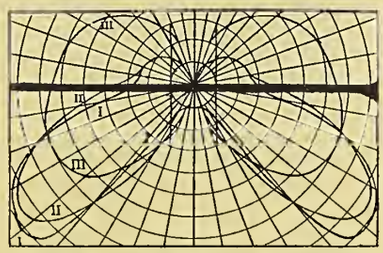


PRACTICAL SUGGESTIONS FOR THE AVOIDANCE OF GLARE—THE IMPORTANT QUESTIONS OF GLASSWARE—HOW IT INFLUENCES DIFFUSION—HINTS FOR MAKING FIXTURES MORE ATTRACTIVE

BY F. LAURENT GODINEZ

EDITOR'S NOTE.—*Science has advanced much during the last decade in eliminating evils and correcting abuses, especially those connected with home living. We have a better architecture, more efficient means of sanitation, but in one department of the home we remain woefully ignorant. The question of illumination is answered to-day with little consideration of the esthetic. We are entirely unaware of the vast possibilities of light as a means of decoration and know nothing of its subtle influence upon our health and even our mental attitude. Mr. Godinez has spent much time and careful research in this field and has astonishing disclosures to make that will awaken our dormant sensibilities. Although his criticism is direct, it is of the highest order in that he offers a remedy for each abuse which he makes apparent. He does not advocate any definite equipment, but he suggests how each individual may make use of his own to best advantage, and what are the desirable requisites of new material. In this article practical advice for correcting unsatisfactory illumination is given. The January issue dealt with the question of eye-strain and its attendant evils.*

THE modification of light sources for the attainment of eye-comfort, atmosphere and repose in the home involves among other considerations an analysis of the glassware used in lighting. Whether in the home or abroad, the over brilliancy of modern illuminants should legally necessitate their concealment within shades for the purpose of eye protection and, where necessary, the redistribution of light over working areas. Since our visual impressions are invariably acquired from surface indications, it is evident that the effects and influence of artificial light are very largely dependent on its shade or covering. Therefore the source of light should invariably be concealed in appropriate glassware, which then becomes a secondary source, and through its own character determines our direct or subconscious impressions of the light.



Roman numerals indicate comparative distribution of illumination above and below the horizontal when various media are used, i. e., I, with no enclosing globe; II, with ground glass; III, increased diffusion with opal glass.

Never introduce in the environment of the home the shades or globes which suggest the ugly, commonplace, ribbed affairs of the shop interior. Remember the eye cannot refrain from straying toward a source of light and let that source be mellow, subdued, and artistic.

Several years ago, when electric illuminants were less economical than now, the glassware manufacturer did his best to make shades which would reflect, re-direct, and concentrate every ray of light over a working area, sacrificing every consideration of appearance, or beauty, for economic efficiency. To-day, however, owing to the wonderful economy of illuminants and to the increased use of gas and electric light in thousands of homes, the glass maker must shape his product for adornment as well as utility. Artificial light is so cheap in cost that the great problem of the hour is to prevent its becoming cheap in appearance,—and the makers of lighting glassware must come to the rescue. Some of them have done so, but others still continue to unload a product which has become old-fashioned as well as ugly, ignoring all the wonderful possibilities of the chemistry of glassware for the time-worn argument of the illuminating engineer—"for utility."



If the light source here be covered, the pleasing result of eliminated glare is instantly realized

The more progressive glassmakers who have done things worth while, have erred, perhaps, in that their product is not always so attractive when illuminated as it is by daylight. This is because certain forms of glassware for lighting are adapted to modern illuminants, and others are not.

While "transparency" is the most common attribute of glass, there are kinds which are but slightly transparent, even opaque.

After the fire-clay pots, in which a mixture of sand, carbonate of soda, carbonate of calcium, and red oxide of lead have been heated and maintained at a melting temperature, the furnace is cooled, and the glass, at various stages of cooling, may be blown, cast, pressed, rolled, drawn, cut, drilled, ground, and shaped in many forms. Acid etching, sand blasting and grinding, have various effects in bringing out the body color and lending texture or softness of tone, and these various applications modify the appearance of glassware, and have much to do with its artistic effect, and its transparency, which should be carefully considered.

In many interiors with average ceiling heights, lighting fixtures are hung so that the pendant, or upright shades are continually within the visual field. In such cases glassware must be selected to perform several functions. Ocular comfort demands that these globes shall be restful and uninjurious to the eye, since the brilliancy of the light source within them must be subdued by their diffusive action.

Globes of harmonious contour and with that proportion of line, expressive of period and fixture design, should be selected. It matters not how beautiful a globe may be, when not illuminated, if when lighted an ugly, glaring splotch of light reveals the location of the source, and destroys its pictorial value.

Globes and shades may be of totally enclosing, or semi-enclosing form. The former entirely enclose a light source, or else expose but a small portion of the lamp tip. In globes of such form light from the illuminant within is transmitted through the struc-

ture of the glass, and the pleasing appearance of such globes and their diffusive properties is entirely dependent upon the nature of the glass and its surface treatment.

In a totally enclosing globe of ordinary clear glass, the outer surface of which has been ground or etched with acid, there is apparent a brilliant spot of light in the midst of an illuminated area of less intensity. The microscope and camera combined were utilized by the writer in studying the phenomenon of light transmission in various media and it was noticed that the effect produced was to allow light rays to pass through the glass without changing their direction. It is well to realize that with either an electric bulb or incandescent gas mantle, the greatest candle power is obtained from the side of the lamp, the greatest radiating surface being there. Naturally from the tip or base, where the radiating surface is less and there is much impediment to light rays in the form of metal sockets or burners, the light is weakened. Gas or electric lights are therefore rated by their horizontal, or side candle power. Hence the electric lamp which gives sixteen candle power on the horizontal, is rated as a sixteen candle power lamp, despite the fact that the candle power from the tip downward (when the lamp is in a pendent position) is but 6.6. The bright spot light, tells us beyond dispute that the greatest candle power is on the horizontal and nowhere else.



Source brightness must be subdued to avoid obliterating the delicate etching of such glassware



Fixture arms at this angle are incorrectly placed; the globes expose the lamps

In a room of average ceiling height, with the typical fixture drop, such a globe would allow the greatest amount of light to pass directly toward the side walls, causing an annoying glare or reflected light from picture glasses, and leaving the extreme upper and lower portion of the room in a stratum of darkness. There is positively no excuse for the use of ground glass in any form with modern illuminants. With the older and more subdued types of light sources the spot light effect was, of course, less aggravated.

For example in the Colonial lamp so often seen there is an appropriately formed globe upon which a design is cut, the background being *ground*. Now, with an oil flame, while there is slight visibility of the source, it is entirely natural and therefore good.

Even with a small sized electric bulb of the carbon type the effect is passable, since, at least, the amber quality of light subconsciously suggests the thing which is lacking. But with a tungsten lamp we have a brutal glare, so painful to the eye that one cannot regard the lamp without squinting, and all the beautiful detail of the design is lost.

While the use of the amber gelatine film, previously described, will modify the color value of our light source without diminishing it appreciably in quality, the spot light effect will still remain as long as ground glass is used. It is a question, therefore, whether it is not preferable to choose the lesser of the two evils by placing over the lamp proper a diffusing cylinder of opal glass, thereby entirely concealing from view the ugly source, beneath the pleasant suggestion of a luminous cylinder, soft and mellow in tone.

When a totally enclosing globe of opal glass was placed over the same source of light used with the ground glass globe giving the spot light effect, it was evident that instead of a brightly visible spot of light against a blurred, obliterated background we had a uniformly luminous outline. Therefore, any design, or detail on the surface of the glass, in *bas relief* would be unimpaired from distortion by "spot light" effect.

Opal glass has the advantage of a smooth, yet depolished surface, and does not collect dirt like ground glassware, with its rough exterior. Phosphate glass, like opal, holds in suspension innumerable particles of an opaque white color. Most ordinary opal glassware resembles phosphate glass, with the exception that the suspended particles in the former are often visible, and are flake-like and blotchy in appearance.

Another grade of this glass, known as Etruscan opal, is being offered by several glassmakers, with a granite surface treatment, rich in expression. Several excellent imitations of carved alabaster bowls have been quite beautifully rendered in pressed form. Their effect when lighted is beautiful.

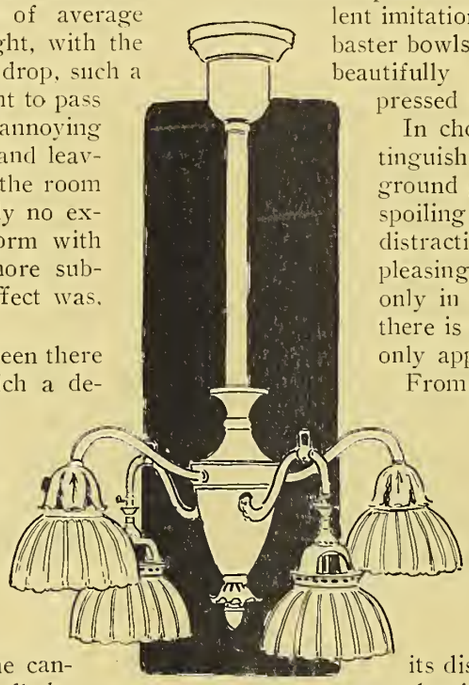


The best effect with glass prisms is obtained when used in conjunction with amber film

In choosing glassware it requires no expert to distinguish ground from opal glass. Invariably with ground glass there is the glaring spot light effect, despoiling the beauty of design or ornamentation and distracting the eye. Opal glass is known by its soft, pleasing diffusion, and concealment of source. It is only in its cheapest and most translucent forms that there is any visibility of source, and then this defect is only apparent at close range.

From the angle of utility, it is interesting to know that opal glass, by virtue of its suspended opal particles, has the property of redirecting light, even when in the form of totally enclosing globes. The light redistribution tends to assume the form of the globe. Thus, a sixteen candle power lamp, giving more light on the horizontal than from the tip downwards or base upwards, when placed within a ball of opal glass will have its distribution of light modified by the opal ball, so that it will be more uniform, and, like the ball, more nearly spherical. That is, in the case of a bare lamp hanging pendent where the greatest light was in the

(*Continued on page* 152)



Bend the fixture arms to redistribute light, but use more suitable glassware

A Summer Home — Well Furnished

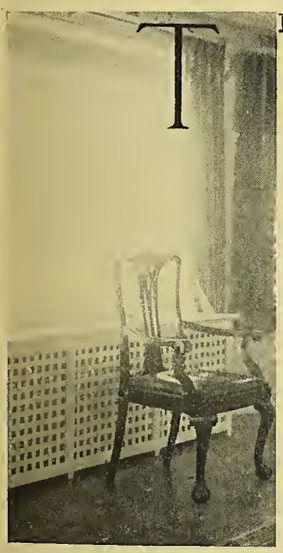


The home of Mr. Charles H. Traiser, Clifton, Massachusetts.
Howland S. Chandler, Architect.

AN INFORMAL HOUSE WHERE ESPECIAL CARE HAS BEEN TAKEN IN FURNISHING THE BEDROOMS SO THAT THEY MAY BE COMFORTABLE AND ATTRACTIVE—PAPERS, CURTAINS AND RUGS THAT ARE COOL AND ATTRACTIVE—A NOVEL DINING-ROOM SCHEME

BY MARY H. NORTHEND

Photographs by the Author



THE trend of the last few years has caused great attention to be paid to the correct furnishing of the home. Details which have hitherto been unnoticed are looked after and careful attention is given that the rooms, when finished, may be correctly done, so that no jarring contrast, glaring and out of taste, results.

A very good example of the progress in this direction of more careful furnishing is found in the Charles H. Traiser house at Clifton, Massachusetts, Howland Shaw Chandler, architect. It is long and low in general effect and is two stories high, with wide overhanging roofs. The exterior finish is of cement and the house is built to fit the grounds rather than the grounds laid out to harmonize with the house.

The entrance to the house is approached by a brick walk flanked on either side by bits of sward and ending in brick steps which lead into a portico and thence to the entrance door. The rear of the house overhangs the water, an unbroken stretch, and the underpinning supports a long, wide piazza which is so near the water that one easily has the impression of being on a ship's deck. It is fitted with willow furniture and appropriate rugs. The entrance door gives into a vestibule which has a spandrel arch between it and the main hall. Here a well placed stairway is shown and the furnishings are noteworthy. The hangings are of gray Japanese grass-cloth and contrast beautifully with the portières of rose pink. The darkness of the hardwood floor is well lightened by the beauty of the imported rugs.

Turning from the hall with its slight suggestion of Colonial design one enters the long living-room. This is a well-proportioned room which has for its chief feature a fireplace at one end showing Colonial detail, and in keeping with the white woodwork and cornice. As the view from this room is chiefly over the water the furnishing has been influenced by the summery prospect from the windows and has been decorated as a distinctly summer room. The furnishings are of willow which gives a lightness to the apartment, and greens and blues predominate in hangings, rugs and upholstery.

Adjoining this room is a library of good size. This is fitted up with book shelves, finished in gum wood and has a large open



Leading out of the living-room is a well appointed sun room finished in brick and lattice work, which makes an attractive lounging place



One of the suite of rooms in which lavender and white wistaria form the key note of the decorations

fireplace. It is distinctly the man's room of the house, retired, restful and dignified in treatment, and gives opportunity for undisturbed comfort while the main living-rooms are in use.

Leading out of the living-room is a well appointed sun room, which makes an attractive lounging place, finished in brick and lattice work. The color scheme here is green and white and everything is in pleasing harmony, the furniture being all of willow. The lattice work will eventually be covered with vines which have already been started as house plants.

The dining-room is brightened by the bay window extending along one entire side and providing a beautiful outlook. The trim is of white enamel paneling, extending about six feet in height. A rather distinctive feature is the introduction of Japanese paintings as a frieze set above and held by wooden strips joining the wainscoting. As there is the full brilliance of Japanese artists' colors, the effect is quite remarkable, giving coolness but providing cheery brightness. The lighting fixtures here also are carefully planned; four sidelights of Sheffield design are attached to the wall, two at either side of the door, and two at the niche that was built in to contain the sideboard. These fixtures heighten the effect of glass and silver on this piece of furniture. The center light above the dining-room table is of an opal glass that diffuses a pleasing glow about the room. There is absolute simplicity of decoration employed, but the whole treatment is very effective.

One feature well worth remarking here is the fact that not a single radiator throughout the house is exposed. All are hidden behind grill work of attractive design as evidenced in the illustration on the first page of this article.

The whole lower story has been thrown into practically one room, which allows for extensive entertainment in a comfortable way. It also allows a cooling breeze to circulate in the summer so that the house is never uncomfortably warm. The windows are well placed, allowing for plenty of sunlight through the day, and a constant current of air during the hot weather.



The dining-room is paneled in white enamel and uses for a frieze squares of beautiful Japanese water colors. This shows a good example of a niche planned for the sideboard



The cut out wistaria border is duplicated in the cretonne covers, the curtains and the bedspread. The bedroom furniture is of graceful design

Simplicity is sought. There is a quiet elegance which is shown in the careful thought exercised in selecting every piece, and avoiding a surplus of even good furniture, arranging it so as to give scope for good taste and originality. For the proper arrangement and furnishing of a house is a problem which is not easily solved, and the careful placing of furniture in rooms by themselves is a task which if properly handled, gives refreshing results. Here the pieces may be original, or they may be reproductions, but still they show the good taste and dignity which mean a thoughtful working out of details.

The service department is well planned and shows a kitchen, butler's pantry, and ample store rooms. In fact, everywhere throughout the house are closets so ample and so many that they delight the housekeeper's heart.

If good taste has been shown on the entrance floor, as artistic furnishing is seen in the second story. This is given up to chambers, baths and dressing rooms. Notable among them is a suite of rooms which is finished in lavender and white. Now the idea of lavender and white as a color scheme may not appeal



Heavy mahogany is replaced with light and delicate fittings and the color schemes are carried out carefully in but two colors



Pink and white predominate in this girl's room and are repeated in the ribbon and rose border

to everyone, but could these rooms be seen in their natural colors, without doubt the impression would be that this is one of the most beautiful of color combinations. Graceful wistaria forms the foundation of the floral design in these rooms, the bunches of blossoms draped artistically from the ceiling. The same flower detail is shown in the hangings, bed and couch coverings, while even the screen is finished in lavender and white. The bed with its wicker appointments is done in the same color scheme. The lighting in these rooms differs somewhat from that in the other rooms, having little gas fixtures of artistic design inserted in the walls, while a reading lamp stands by the side of the bed.

While speaking of furniture it might be well to mention bedside tables that are in each bedroom. These are of the same design and construction as the beds and are covered with glass tops. Those who appreciate the luxury of reading in bed find such articles add greatly to one's comfort. They may contain besides the lamp a water pitcher and glasses.

Another room in this house which is equally attractive, shows rattan and wooden furniture of comfortable form and artistic design in which pink and white predominate. This is a dainty room, furnished appropriately for the daughter of the house. The border of the wall paper is of ribbon and rose pattern, while the cretonne hangings are all of pink and white. The lighting is mostly from the sides, but over the dressing table has been introduced a hanging light which affords better illumination here where more light is appreciated.

Each room is just as carefully thought out, and each is devoted to two colorings which harmonize perfectly. To be sure, occasionally we find a room furnished in the Colonial period, but the general idea throughout the house is for up-to-date, artistic and well thought out schemes which go for perfect furnishing. This plan has been chosen for exactly what it represents—the fitting up of a summer home, using care to exclude the heavy mahogany pieces and substitute light, airy and delicate fittings which harmonize with the idea of what a summer home should contain.



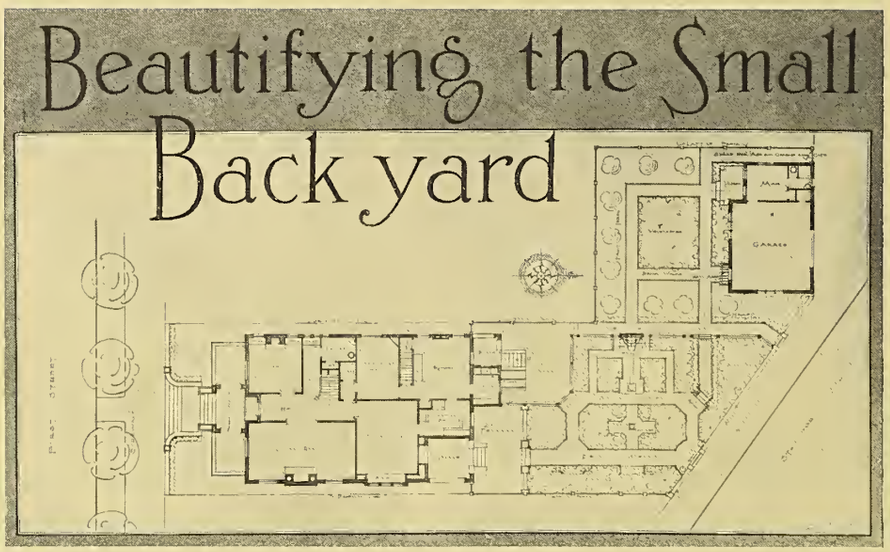
The living-room is long and well proportioned, its chief feature being a fireplace of Colonial detail in harmony with the white trim

The house is as yet very new, having been finished only last year. In several years' time, when the vines have grown and the trees have grown up to overshadow the plain and simple exterior, one will see a decided change in the grounds. This may appear a great advantage, objection being made to the present severity of the exterior without its setting of trees, shrubs and flowers; but to the expert critic, there is a feeling of relief to find a house like this which speaks for itself in its dignity and well-defined originality of construction and manner of furnishing.

Especially in the bedrooms is the mistress to be commended. The idea of a two-color scheme for each, followed out to the smallest detail of harmony, is better than endeavoring to have each room a different single color.



Beautifying the Small Back yard





A CONCRETE EXAMPLE OF MAKING THE SPACE AT THE REAR OF YOUR HOUSE ATTRACTIVE BY JUDICIOUS PLANTING AND ARCHITECTURAL ARRANGEMENT

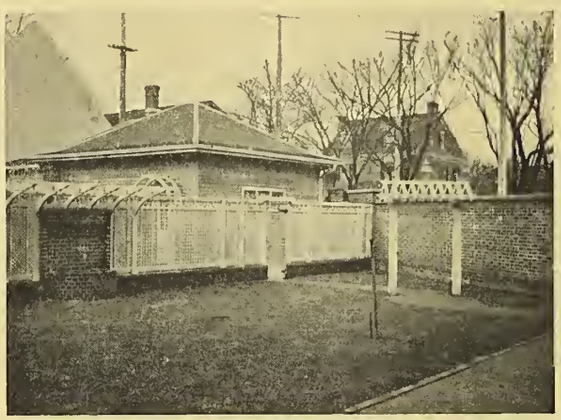
Photographs by S. P. Negus, Landscape and Garden Architect

THE matter of making the so-called "back part" of the suburban place attractive architecturally and horticulturally, is often neglected by the house owner. After seeing to it that this essential part of his home is so designed as to be satisfactory from a purely practical point of view, he too frequently lets the matter rest there, instead of so making use of improvements well within his reach that the "back yard" shall become a place of real beauty. Nor is this improvement a mere matter of theory, a fanciful thing that exists only on paper or in the imagination of a city dweller removed to a ten by fifteen lot in a suburban town. In many instances it has been carried to a most successful conclusion, and nowhere, perhaps, are its best developments more undeniably presented than on the place which we illustrate here, and which was designed by Mr. S. P. Negus, landscape architect, for Mrs. H. P. Bunstine of Dayton, Ohio.

Besides showing graphically how much can be done toward making a back yard "garden" that really deserves the name, the photographs demonstrate conclusively that a long period of time is not necessary for the place to assume an air of completeness and settled age. But a single year's progress is shown here, and yet in that period this place of Mr. Negus' designing has been transformed from a bare and unattractive back yard to a really pretty garden where the warm, red brick walks are bordered with flowers and box, the lattice work and arbor covered with vines, and the whole transformed into what it is intended to be—an outdoor living-room.

Perhaps a few words of explanation as to the reasons lying back of the design may be of interest. In the first place, it was obvious that no so-called "natural" manner of planning would be appropriate in such a restricted space, surrounded as it is on all sides by rigid architectural lines. The scheme, therefore, is strictly formal or architectural in plan, such as would best "tie in" with the house and harmonize with the surroundings, and at the same time utilize the limited space to best advantage.

The garden is bordered on the street side by a high brick wall and separated from the adjoining properties by tall lattice fences. The problem here is really that of an outdoor living-room, and there is no more reason for exposing it to the public gaze than to open up to public view the living-room inside the house. Whatever the merit of the argument sometimes heard against the English practice of enclosing their private grounds, there can be no question of its expediency in such a case as this.



A brick wall closes the rear of the garden and a lattice fence screens it from the service quarters



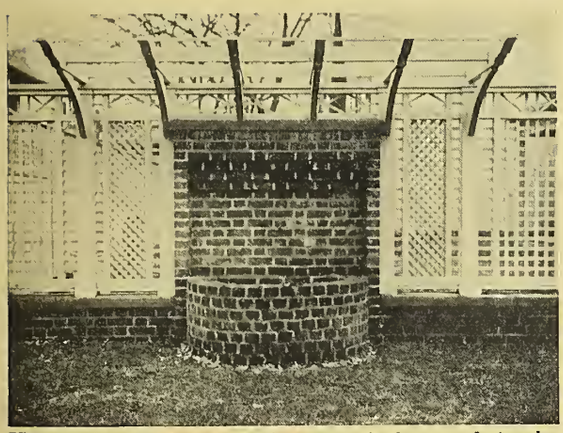
View of the above after twelve months, showing the apparent increase in size after planting appeared

The "back yard" here pictured is divided into four "compartments," if I may so term them: flower garden, vegetable and service quarters, terrace, and drying yard. The flower garden proper occupies a space of approximately fifty by sixty feet, while the vegetable and service quarters measure about forty by fifty feet. Nevertheless it is extraordinary how much gardening pleasure the owners have in their limited domain.

The main feature of the garden is a head of the sylvan god Pan in dull green *faience,* set into a cement and brick wall panel. He cheerfully spouts water out of his mouth into a basin containing gold fish, whenever he is given the cue by a turn of the handle on the terrace. The overflow from the basin trickles musically down a shallow brick channel in the walk into a central bronze drain which also carries off the surface water of the garden itself.



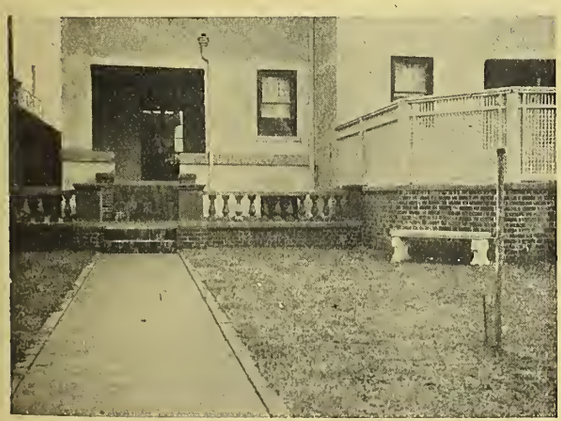
At first the yard appeared chill and uninteresting



The main architectural feature of the yard is the fountain improved later by the flagged walk



Practically the whole extent of the garden before planting changed its aspect



The garden entrance to the house with the terrace and lattice surrounding the drying yard

In the center of the garden is an old Japanese stone lantern, small in size and simple in design, in which has been set a low power light, which by the turn of a switch casts a mellow amber glow over the garden.

The garden walks are of brick laid "herringbone," and two simple wooden seats are placed in convenient nooks. The garden is entered from the street by an oaken gate through the wall, and from the service quarters by an archway covered with purple wistaria. The central plot surrounding the lantern is carpeted with English ivy, and all the walks are crisply outlined in dwarf box.

For the reason that the garden has been designed with the object of being attractive at all seasons of the year, considerable use has been made of low, broad-leaved evergreen shrubs as a background for the more showy old-fashioned perennial flowers and bulbs which give an abundance of bloom and color throughout the spring and summer.

A lattice of attractive design separates the flower garden from the vegetable and service quarters. Here again the paths are of brick, with a central plot for a few choice vegetables, and old-fashioned sweet-smelling "pot herbs," the whole surrounded by a border containing dwarf fruit trees and flowers grown for cutting and house decoration.

For those who may plan similar gardens, the following list of what was planted on Mrs. Bunstine's place may serve as a basis on which to work:

Fruit Trees—

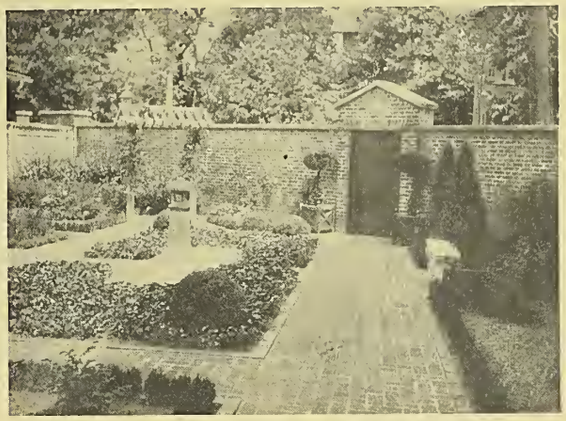
7 Dwarf apples (Standards) in variety.

6 Dwarf pears (Standard) seckel.

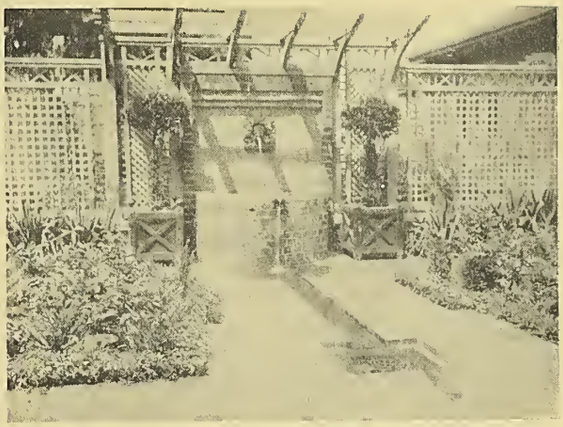
Ornamental Trees—

1 Cornus Florida (Flow-

(*Continued on page* 129)



An unpleasant prospect was shut out by the trees



Simple planting with brick flagging accentuated its position and effect

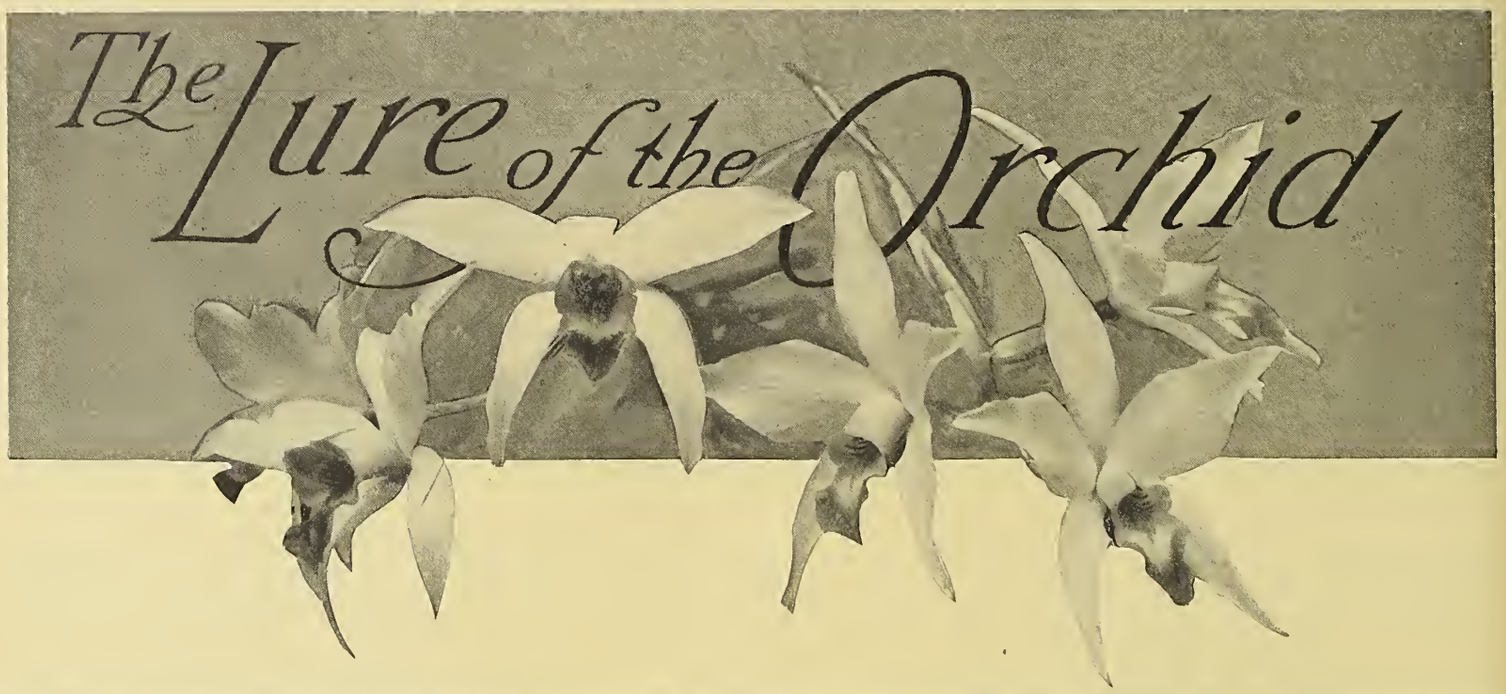


The same view showing what flowers and shrubs accomplish in added attractiveness



The improved approach to the house even has the effect of making the building itself look more beautiful

The Lure of the Orchid



ITS HIGH DEVELOPMENT AND MANY POINTS OF INTEREST—ITS INGENIOUS METHODS OF FERTILIZATION —THE WORLD-WIDE SEARCH FOR RARE SPECIES—ITS EFFECT ON THE ANIMAL LIFE OF ITS ENVIRONS

BY TYNDALL BISHOP

Photographs by Nathan R. Graves and Ella M. Boult

NO flower has a more peculiar hold on the imagination than the orchid. Around no other has there been gathered such a mass of legend and so much misapprehension. Notwithstanding a keen interest in and apparent appreciation of the orchid, there is really no flower about which the public knows so little, while willing to believe so much.

Perhaps the most glaring misconception, as it is the most often repeated and most generally believed, is the statement that all orchids are parasites, and writers add insult to injury by classifying them as fungi. Nothing is more untrue and nothing arouses the ire of the orchid lover more thoroughly. While recent investigations point to the conclusion that certain of the saprophytics have parasitical tendencies, yet in all the ten thousand known flowering species no real parasite has been discovered. True, a large number of them, and these the most interesting, grow on trees. But it is not from the trees to which they cling that they obtain their nourishment. They are not vampires, sucking the sap from the branches which give them shelter. On the contrary, these marvelous plants subsist chiefly on air. While the dust collecting at their roots furnishes some nitrogenous matter, their real living and the drink which chiefly sustains them, is the moisture of the atmosphere itself.



Due to the long nectary, *Aeranthes sesquipedalis* can be fertilized only by one species of moth

Instead of belonging to the fungi, the tribe of orchids forms the very highest caste of the vegetable kingdom. No other order of plants is so highly developed and no other exhibits such a wide range of shapes and sizes with so many singular modifications of root, tuber, leaf and flower.

Their flowers, differing vastly from each other, some beautiful and elegant, others bizarre and grotesque, are so remarkable in many of their forms that it is no wonder that they have been thought to possess something closely resembling intelligence.

Charles Darwin was the first to read the meaning of their endless diversity of structure. Others, Sprengle, Brown and Hooker, had caught hints, but it was Darwin's painstaking study as set forth in the most fascinating of scientific works, "The Fertilization of Orchids," that revealed the secret of the orchid's life and incidentally threw a flood of light on the meaning of other flower forms. Earlier investigators had observed them to be barren in the absence of insect visitors, but it was reserved for Darwin to discover how the organs of almost all orchids are so arranged that fertilization can only take place through the transportation of pollen from flower to flower. In other words, the countless, cunning adaptations as seen in their flowers are all means to one end. The bent and aim of all orchids is the improvement of the species, and this, with a multiplicity of resources, they are attempting through the experiment of cross-fertilization.

Less skillful plants engaged in the same endeavor resort to haphazard methods, entrusting their pollen to the wind, or dusting therewith the wings of butterfly visitors, even offering it

as food to the greedy bee, in the hope that by chance a few grains will reach the pistil of some other flower. Not so the ingenious orchid! Such wasteful methods are beneath it. Its pollen grains, too precious to be scattered broadcast, are wrapped in sealed packages and invariably fastened securely to the insect messenger that is to carry the life-giving substance to the waiting stigma of the bride flower.

To attract the messenger, gorgeous colors are displayed and sweet perfumes wafted on the air. Honey, too, is usually provided in good store, but always in a way that prevents the insect from taking toll without performing the task that the crafty flower has assigned it. Sometimes no free honey is present. In order to get the sweets the insect must bore into the tissues. These tissues are placed in parts of the flower where the insect will come in contact with a sticky membrane when assuming a position to drill. This instantly glues itself to the intruder's head, and in flying off the insect drags the pollen masses with the membrane. Eager for more nectar, the insect now seeks another flower, where, in negotiating an entrance, it will, perforce, leave the pollen where it reaches the ovary. In other kinds of orchids, in the *Cattleya* for example, plenty of honey easy of access flows at the bottom of a long trumpet. Mistress Humblebee finds no trouble in reaching the feast, but in retreating she upturns a cup of glue and smeared with its contents rubs against the pollen masses and carries them away.



Miltonia vexillaria was once profuse in Colombia but now is only procurable by root division

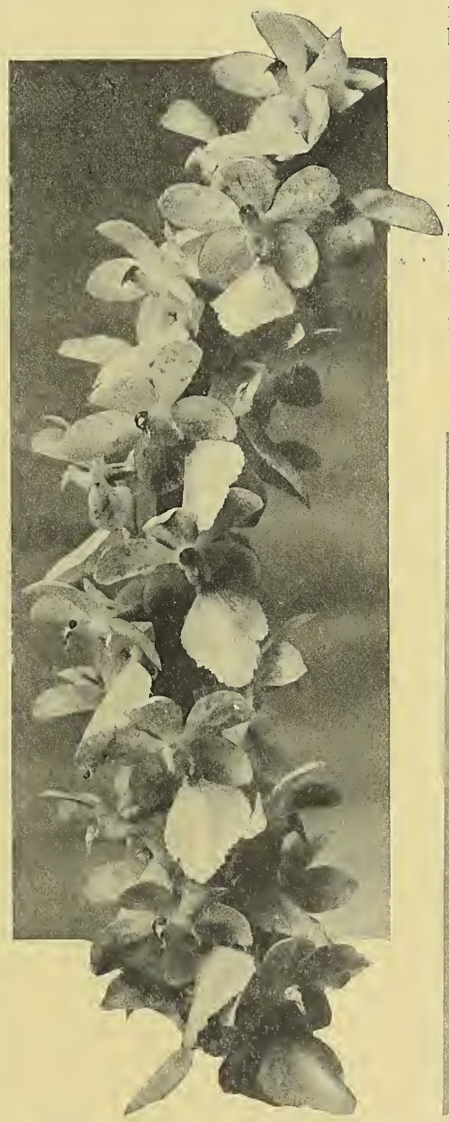
Gentle methods are not always pursued. There are the *Coryanthes,* whose blossoms form suspended baskets, half full of the clearest water. Attracted by the powerful perfume, curious bees congregate on the edges. Exploring for nectar, of which there is only a semblance, one of them is bound to fall in. With wetted wings she cannot fly. The walls are too steep and slippery to permit her to crawl up. Casting around for a means of escape, she sees at one end an aperture. It is not large enough for her to crawl through, but as she presses forward, the walls give way like a trap door, permitting her to pass out along a narrow tunnel. In doing so she comes in contact with the viscid pollen mass which immediately becomes cemented to her back. The foolish creature, having learned nothing from her bath, repairs to another flower where the same performance is repeated. This time in passing up the narrow channel, the pollen mass is left on the stigma, which, in the economy of the flower, is placed just below the anther.

More elaborate is the mechanism of the *Bulbophyllum Lobbii,* whose lip, supported on pivots, is built like a catapult. An unsuspecting fly lights on the front lobe and advances along the teeter. Quick as a flash it is shot up against the overhanging stigma and held prisoner, until, if it has brought pollen, the flower is impregnated.

Perhaps the most remarkable of all orchids is the *Catasetum.* In this the male and female organs are not found in the same



Cattleya labiata. The delicately frilled petals enclose an intricate device for fertilization



A curious orchid. Each flower resembles a bird alighting



Laelia purpurata. The interest in orchids lies not only in curious forms but in exquisite colors

flower, and the separation of the sexes has given rise to such distinct and unlike forms that for a long time botanists thought them to belong to totally distinct genera. Of their fertilization Darwin says: "Nature has endowed these plants with what must be called for want of a better term, sensitiveness, and with the remarkable power of forcibly ejecting their pollen to a distance. Hence, when certain definite points of the flower are touched by an insect, the pollinia are shot out like an arrow which is not barbed, but has a blunt and excessively adhesive point. The insect, disturbed by so sharp a blow, or after having eaten its fill, flies sooner or later to a female plant, and while standing in the same position as it did when struck, the pollen end of the arrow is inserted into the stigmatic cavity, and a mass of pollen left on its viscid surface. Thus, and thus alone, at least three species of the genus *Catasetum* are fertilized."

Notwithstanding their elaborate artifices, orchids are most dependant creatures, each species absolutely relying for the propagation of its kind on the special insect carrier it has selected. Thus we see whole groups reduced to the commonplace device of flaunting their white banners in the dark, the better to attract the night-flying moths by which they are fertilized. So, too, and for the same purpose, the sweet-scented varieties of the Philippines give forth their perfumes only after dusk. The *Aeranthes sesquipedalis* of Madagascar, a wonderful flower, with a nectary prolonged into a sheath from twelve to eighteen inches deep, can only be fertilized by a moth with a proboscis long enough to reach the honey secreted at the bottom of the pouch. This abnormal lepidoptera failing, the *aeranthes* must likewise perish.



Our native, yellow lady slipper; compare with its exotic sister below, the *Cypripedium selenipedum*



Interest in orchids, however, is by no means confined to these curiosities. The great attraction is really on the esthetic side. The beauty of a large number of them is unequalled in the works of Nature, and would be sufficient to attract attention were orchids as common as daisies in the field. Naturally their interest is enhanced by their rarity. Orchids are never common. Although sometimes plentiful enough in the inaccessible tropics, they are, even there, but sparingly distributed at the best. There are many species, but each species is composed of comparatively few individual members. Wherever found they are among the unusual flowers, and yet the great family is so widely scattered that its members tenant nearly as wide an area of the earth's surface as do human beings. Some of them make their abode where man cannot live. They are found on the hot and arid hillsides of India, in the bogs of Maine and Canada, in the meadows of England, in the jungles of Brazil, in the wooded canyons of California, on the bare mountains of Sumatra, and indeed, except for the polar regions, there is no country to which they are not native. One species, *Oncidium nubigenum,* the "orchid of the clouds," is found in the Peruvian Andes at a height of fourteen thousand feet above sea level, and variations of the *epidendrum* grow far above the timber line, where trees are unknown and snow is almost a daily occurrence. Other species are among the familiar wildflowers of the temperate regions, and "long-purples" and "dead-men's-fingers," flowers mentioned in Hamlet, are both orchids. Generally speaking, however, the species represented in the temperate zones are inconspicuous, usually to extreme modesty, frequently are devoid of beauty, and know no such variety of color or size as do their exotic sisters.

While in saying this I am not forgetting the lovely dendrobiums of Australia, nor the many, charming cypripediums of the American woods, yet it is uncompromisingly true that without the tropic varieties, interest in orchids would be confined entirely to the botanist or to him who has the patience to seek out the wonderful, wild plants of bog and swamp. Even then the stimulus would not be found that is now given by the many curious and puzzling forms, the wonderful contrivances and the surpassing splendor of the southern importations. From the tropics alone all orchids of horticultural value are derived, and amateurs have recruited their great collections from the same regions.

Numerous as exotic orchids are to-day, nearly all of them have been imported within the last sixty years. During this period the orchid-growing regions of the world have been ransacked, and while there are spots still untouched, jungle recesses which so far have baffled the most ardent explorers, whole sections have had their glorious plants packed off by thousands to England and America, leaving in some cases their native habitat bare. Thus entire sections of Colombia, once the home of *Miltonia Vexillaria,* have been denuded of their treasures, and persons desiring specimens of this plant must now wait the tedious process of root division or the more uncertain results of seedling propagation. In these days the most ardently sought for of all orchids is the *Odontoglossum crispum.* During one search for this species when ten thousand plants were collected, four thousand trees were cut down to obtain them, and the camp was moved on week by week as the explorers exhausted the available supply. It has been estimated that a tree has fallen for every three pieces of *crispum* in cultivation. The forest devastation that their possession has cost the world may be realized when it is considered nothing unusual for a single collector to have five thousand of these plants on his shelves.

The small island, Santa Catarina, off the coast of Brazil, was the home of *Laelia elegans,* where with *Laelia purpurata* and *Cattleya Leopoldii,* it flourished in a profusion seldom known to

(*Continued on page* 127)

The Place of Built-in Furniture in the House

WHERE BUILT-IN FURNITURE MAY COMPLETE A DECORATIVE SCHEME—WHERE IT FITS AND WHERE IT MAY BE OUT OF PLACE—OPPORTUNITIES FOR UTILIZING WASTE SPACE AND SUGGESTIVE HINTS

BY LOUISE SHRIMPTON

Photographs by Mary H. Northend, Jessie Tarbox Beals and Others

IN the distinctively modern house much of the furniture is a structural feature, an integral part of the walls. Ingenious built-in devices are also introduced throughout, expediting household service and promoting convenience. Furniture and devices are designed by the architect in connection with other architectural features; or are carpenter-built under the home-builder's direction; or owners possessed of handicraft training themselves design and build them.

Not the least of the advantages accruing to furniture of the built-in type is that it suits individual requirements. An ideal is faithfully carried out without the weary search through shops that often results in compromise or disappointment. An architect's plans and elevations, or instructions and a few dimensions given to the carpenter, produce a piece of furniture that is precisely what the owner wants. Every home-builder with a love for books has ideas as to their proper housing; open or closed cases are easily built in, so contrived perhaps that the seeker after books does not have to fall on his knees nor climb ladders to reach them. Every house mistress has convictions on the proper mode of storing away doilies. And in one linen cabinet of the built-in sort there may be bars around which doilies are loosely rolled; while another is fitted with a series of wooden trays on which the doilies lie flat, each set of them on a tray of its own. The practice among home-builders of giving careful thought to the disposition of each article of household gear makes for results of decided individuality. And as a consequence of this thought the interior sometimes becomes an epitome of the owner's tastes and convictions, a background of extraordinary value. A room may convey to the guest a subtle impression of literary or artistic culture, due, among other things, to the realization in the fittings around the walls of some long-cherished ideal of the owners. A practical point is that furniture thus built fits the owners in size. There is a fireside seat made to measure for the man of the house. A desk is contrived at just the right height for the house mistress, and with it a seat or bench. Sleeping-room fittings are built in varying sizes to suit the occupants. Comfort is a necessary characteristic. A built-in bench or seat, not of the right height or depth and without comfortable cushions is never used, becoming merely an ornament of doubtful worth.



This attractive ingle shows what can be done with odds and ends of builders' material

In the well-equipped house, not only are the owners' personal preferences gratified and their living-rooms made pleasant and illuminative backgrounds, but the house as a place for housekeeping is successfully exploited. Useless walking is done away with by careful placing of the fittings that help in household tasks. Cupboards and racks holding linen, food supplies, or saucepans, are so placed with relation to other household fixtures that speed in service is assured. The endless series of entries and pantries once built, has given place to one or two rooms, the walls of which are covered with compactly arranged fittings. While the house in its methods is still inferior to office and factory, it is steadily advancing in efficiency as a work place. In houses built within the last year or two, the broom and dust-pan are non-existent. Attachments on each story are provided for the vacuum cleaner, run by electric or water power. Dust cloths need smaller allotment of space in kitchen cupboards with this dustless cleaning, and broom cupboards, formerly provided on each floor, are eliminated. Many ingenious devices are installed to save labor. In the hall closet is perhaps a trap door with a shelf beneath for firewood for a nearby fireplace. A small dumb-waiter is often put in between kitchen and the up-stairs sitting-room, so that afternoon tea is served without stair climbing. A special refrigerator or tiny cool room is sometimes built in accessibly. The laundry chute invariably put in, saves the tugging of clothes-baskets downstairs to the laundry. These features and others impossible to buy ready-made are installed at small expense when the house is being built.



How the aspect of a room may be altered by built-in furniture—a separate library is formed by these bookcases

An advantage of built-in pieces as opposed to heavy movables placed against the wall, at least according to the housekeeper's

point of view, is that the built-in product avoids the storing up of dust. Even with a vacuum cleaner, the wall behind a heavy piece and the floor beneath it are not properly cleaned unless the piece is moved, a process involving much labor, and possible damage to the piece at the hands of a careless maid. The built-in piece is itself the wall and cuts out a section of floor. Its moldings may be plain and the broad surfaces unornamented, their perfect smoothness making cleaning or dusting an easy task.

In that best of economies in house-building, the saving of space, built-in furniture helps astonishingly. A small house with built-in features often possesses the amount of actual floor space available in a much larger one. Chests of drawers of varying depths, built into sloping roofs around dormers, are noteworthy examples of the utilization of waste space. Home-builders fitting up their first house find it possible through the building of these chests, to dispense with dressers or chiffoniers. A cheval glass is often fitted into a door panel instead of occupying valuable floor space.

Built-in wardrobes are the modern substitutes for closets. The contrast is great between the wardrobe and the old-fashioned closet with its waste floor space, its darkness, limited supply of hooks, and floor cluttered with shoes. In the wardrobe paneled doors disclose, when open, well-lighted compartments of convenient height, fitted with poles for hangers or filled with movable trays of light wood used for holding shirts or waists. Smaller ventilated compartments at the wardrobe's base hold boots and shoes, while separate doors at the top open into built-in hat boxes large enough to hold several hats. If a wardrobe is extensive, trays or drawers are numbered or lettered as an index to their contents. A child's wardrobe fitted with trays is found especially convenient, since small frocks may be kept at full length in them.

A window seat under a dormer is often fitted with a long drawer beneath, and with built-in chests or wardrobes on each side, giving an attractive, white paneled effect to a sleeping-room wall. If the old variety of clothes closet is retained, it frequently has a window, while an inclined shoe ledge with heel rest projects from the baseboard. Linen closets are convenient features occupying an upper hall location. Sometimes a closet becomes a small room, with window as well as electric light. Broad ledges give opportunity for the sorting of linen and the performing of small household tasks, a high stool furnishing a seat. Convenient compartments are devised for blankets and sheets, and a shallow cabinet for medicines may also be a feature of this housewife's room. In a very small house a linen closet is compressed into a wardrobe, but is fitted with a good-sized compartment for quilts and with shelves and trays placed close together, for holding sheets and blankets. Hinged doors, one for each four or five shelves, opening downwards and supported by chains or props, form convenient shelves when assorting the linen.

Nooks and corners in a cleverly designed house, the odds and ends necessarily left over in building, are utilized for small fittings. A tiny music cabinet fills a living-room nook. A corner of the butler's pantry, of precisely the size to hold table leaves, is turned into a table leaf cupboard. A plate warmer is installed in another left over corner. Chimney space around flues, utilized in charming fashion for cupboards above or at one side of old fireplaces—those delightful cupboards with white paneled doors, fastened by wooden buttons—is occasionally used in the same way in a newly built house. The old cupboards, their closed doors exciting curiosity as to their contents, and when opened giving out faint odors of Oriental sweetmeats or of bygone roses, represent the poetic side of the cupboard, too often neglected in our modern quest for the practical.

In built-in furniture devised by the architect, he is given an opportunity to carry further his scheme and to ensure its harmonious completion. Furniture as an architectural feature has ob-



A good Colonial effect in keeping with the room is here secured by the built-in china closet



Ugly and useless chimney space can be eliminated by a symmetrical arrangement of cupboards



The built-in sideboard gives the desired space for silver and table linen, the long drawer affording room for table cloths

vious reasons for existence. The beautiful shell buffet of our Colonial period was designed in connection with cornices and fireplaces. It formed an essential part of a perfect whole. The modern movable china closet, standing out as an excrescence and inevitably ugly and in the way, is happily being replaced by the built-in china cupboard. In the modern Colonial house antique designs are copied as faithfully as the difference between old and present-day craftsmanship permits. In the house of modern trim, where flat surfaces, stained, are obtained in the woods used, the cupboards are unobtrusive but pleasing in effect. To cut off two corners of a room with built-in china cabinets is a device often used, giving adequate storing places for glass and porcelain. While the upper half of these cabinets is usually glazed, the lower is given up to cupboards with paneled doors, or even more conveniently is fitted with drawers of varying size.



In a room pressed for space the corner china closet may be a very desirable feature

The use of the bay for built-in furniture is a frequent architectural device giving a point of interest to an interior. A long window seat, either a box opening in sections, or fitted with drawers, or without any storing space beneath, is an effective use of the bay. In a country cottage or bungalow, a sideboard is frequently built in a bay with window above. In the built-in sideboard, precisely the desired accommodation for silver or table linen is secured, and there are long drawers for table cloths.



Chests of drawers built into sloping roofs around dormers utilize waste space and remove the unsightly slope of the eaves

For a large piece of furniture of exceptional value, it is often possible to build a wall niche, enshrining and making it an integral feature. A sideboard, a family heirloom or the work of a modern craftsman, given a special niche with small built-in china cupboard above, is enhanced in importance and makes a spot of special interest in the room. An old desk may in the same way be installed in the living-room. In the sleeping-room a chest of oak or mahogany may have a niche contrived for it in a sloping roof, with a little space left above so that the top may be usable.



The effectiveness of this buffet was attained by the planning of an exact space for it by the architect

The craftsman who constructs furniture around the walls of his house, or who personally directs a carpenter's work, makes out as a preliminary an inventory of household goods and chattels. The library is measured, and the amount of space to be given to books is calculated, with allowance for increase, or with space left for future shelving. In planning cases, shelves are made of varying heights to accommodate books of different size, a method that saves room and gives opportunity for interesting space divisions. The inventory made of china and linen ensures sufficient accommodation while it guards against the building of too many cupboards. Unoccupied storage room is a bad investment. In planning dish cupboards, shelves close together are designed for low, flat dishes. Little halfway shelves prove feasible for small dishes. If the location of each set of porcelain is carefully planned, space is utilized to its fullest extent. The designing of furniture that is comfortable and usable and of fittings adapted to their purposes, is a task indulged in and enjoyed by many home-builders of handicraft tastes.

From what has been said above, it is evident that the appropriate use of built-in furniture is not of necessity confined to the house of craftsman design and simplicity of detail. Reference to the illustrations clearly demonstrates that there is excellent precedent for built-in work, not only in houses of modern Colonial design, but also in their prototypes of an earlier day. One caution should be heeded, however, in designing built-in work in any of the period designs: be very sure that it harmonizes perfectly with the rest of the house.

Designed by an architect, or planned and executed by a craftsman owner, built-in furniture in the successful house fills its own place and fills it unobtrusively. It does not strive to supplant the necessary and often beautiful movables or even to compete with them. It is merely, so far as the eye is concerned, part of a wall, forming a well-spaced, agreeable background for the people who occupy a house. Simplicity is its most valuable characteristic.

Foliage Plants Everyone May Grow

AN EXPOSITION OF A SUBJECT ABOUT WHICH TOO LITTLE IS GENERALLY KNOWN—THE NEEDS, APPEARANCE AND GENERAL CHARACTERISTICS OF THE MOST SATISFACTORY KINDS

BY F. F. ROCKWELL

Photographs by Chas. Jones and Others

THE peerless beauty of palms as house plants is never questioned; and if the details of their culture were more generally known they would undoubtedly be more generally used. The reason why they are not to be found wherever plants are grown in the house is not so much that they are more difficult to handle as that they are different in their requirements.

In the first place, while most house plants should be repotted as often as they begin to form a mass of roots about the outside of the earth ball, palms do best when restricted as to root room. Repotting once a year when they are small, and even less frequently when they are in large pots or small tubs, will be often enough. They grow very slowly, and it is not only useless but dangerous to attempt to force them along at a more rapid pace.

The best time for repotting is late spring—May or June. Use a pot only one size larger than that in which the palm has been growing. Remove carefully, *do not disturb the roots,* and put into the new pot carefully, ramming the new earth in firmly about the old ball with a thin piece of wood.

The soil for palms need not contain as much humus (leaf mold or peat) as that for most other house plants. Good, rich garden loam, with sharp sand added and bone meal worked through it, will be right.

Be sure the drainage is perfect. Crock the pots carefully. If any of the crocking from the old pots comes out with the ball of earth, remove it as carefully as possible and fill in the space with soil. After potting, keep shaded for several days.

While palms require plenty of water, no plants are more fatally injured by overwatering. Above all care must be taken never to let water accumulate in saucers or jardinières in which the pots are standing. Water will soak up through a pot as well as down through it, and water-saturated soil will quickly become sour. When you do water, do so thoroughly, then see that the pots are kept where they can drain out, and do not water again until they show a tendency to get too dry. Much water will cause the leaves to turn brown. In this case, change the treatment at once. The amount of water required is much greater in summer than in the winter, when the plants are practically at rest.



Dracaena indivisa is a good house plant combining attractive foliage with great hardiness



If the piazza conservatory is floored with concrete, the plants may be freely watered without injury to the floor

Direct sunlight is not desirable for palms, but they should have plenty of light. Do not stick them away in a dark corner or an inner room and expect them to do well. They will stand such a situation several days without injury, but should be brought back to the light as soon as possible. They do well in north windows, providing the temperature of the room is high enough. Remember, however, that pots kept in a shady place will dry out much less quickly then those in the light or sunlight. If they are to be kept permanently where the sun does not strike it is a good thing to add charcoal to the soil, as this aids greatly in keeping it from becoming sour.

Give plenty of air—the more the better, so long as a proper temperature is kept up, as that counteracts the effect of the more or less poisonous atmosphere of living-rooms kept closed during winter. Beware of drafts blowing across the palms, but provide plenty of fresh air.

In the spring, as soon as it warms up outdoors—say after the apple blooms fall—place the palms outside in a sheltered position, where they can be given plenty of water. At this time, if they are not repotted, bone meal should be worked into the surface of the soil and a liquid manure of bone meal given once a month or so during the growing season.

Both during winter and summer, shower the leaves frequently with as forceful a stream as possible, to prevent scale and mealy bugs getting a start. Keep the leaves and stems clean by wiping off every once in a while with a soft cloth and soapy water, syringing with clean water afterwards.

Although the number of palms cultivated is very large, very few indeed—only about a dozen—will give satisfactory results in the house. The fact that a palm will live—or rather take a long time to die—under abuse, has misled people into thinking that it does not need as much care as other house plants. This is a mistake.

Palms may be considered in two classes: the fan-leaved and the feather-leaved, or deeply cut, sorts. Of the former there are but three sorts good for house culture.

Latania Borbonica, the Chinese fan-leaved palm, is the best known. It is one of the hardiest, standing a temperature as low as forty-five degrees at night. It is broad in habit, and the large leaves are deeply cut and drooping at the edge, making a very attractive appearance.



Aspidistra linida variegata has handsome, white striped foliage and withstands unfavorable conditions

Livistona rotundifolia, the Miniature Fan palm, is a more compact type of the above; not only the leaves but the whole plant being round in habit and growing quite dense. It is a beautiful, lively green in color, and making a neater plant, is in many ways more desirable for the house than *Latania Borbonica.* It requires more heat, however, and should be kept up to fifty-five degrees at night if possible.

Chamærops excelsa has the distinguished feature of forming shoots at the base, thus having foliage where most palms are bare, and in old specimens unattractively so. Its leaves are shaped like those of *Borbonica,* but are smaller, and the leaf stalk is longer in proportion. It is a good strong variety.

Many of the feather-leaved palms are of more recent introduction than the old favorite fan palms, but they have won their way to a growing and deserved popularity.

Phoenix Rœbelenii is one of the newest. It is destined, I venture to say, to become the most popular of all palms for the house. It has frequently been described as having the "beauty of *Wedelliana* and the hardiness of *Kentia.*" That perhaps describes it, but does not do it full justice. It has several times the amount of foliage that *Cocos Weddelliana* has, and is a more robust grower. Unlike that palm, it has leaf stalks growing all the way to the bottom, the lower ones gracefully recurved and the upper ones spreading airily. It is very easily cared for and on the whole wins on a larger number of counts than any other house palm.



The rubber plant is perhaps the most popular of indoor foliage plants, but it needs intelligent treatment to acquire a good appearance

Phoenix rupicola has gracefully arching, drooping foliage and is very handsome, the dark green leaves being even more feather-like than those of *Cocos Weddelliana.* It is also one of the hardiest.

Areca Verschaffeltii is unique in having a creamy colored midrib. It must be given the best of care, but will well repay any extra pains taken with it.

The *Kentias, K. Belmoreana,* the thatch-leaf palm, and *K. Forsteriana,* the Curly palm, are the hardiest of all the house palms and sure to give satisfaction. The former is of dwarf, sturdy habit, with broadly divided, dark green leaves borne up well on stiff stems. *K. Forsteriana* is of stronger growth, spreads more, and the divisions of the leaf are broader.



Cyperus alternifolius, the umbrella plant, has exotic beauty, though it is easily grown

Cocos Weddelliana is the most artistically graceful of the house palms. The finely cut, feathery leaves spring well up from the pot and from the slender, erect stem. It is a small palm and grows slowly. I think I should give it a place among the three choicest palms for the house, although, unfortunately, it is not as hardy as some of the others. It is the best palm to use as a center for fern dishes.

Seaforthia elegans, the Australian feather palm, is a tall growing and stately variety, which does well in the house.

Caryota urens is commonly known as the Fish-tail palm, and on account of that distinguishing characteristic deserves a place in any good collection. It is a large growing sort and will utilize more root room than most of the others. It is not so strong as most of the others

described, but will succeed well if precautions are taken not to let it get chilled in cold weather.

Unlike the palms, most of the other foliage plants for the house are rapid growers, and depend for their beauty largely upon being grown quickly and under the most favorable conditions.

The Norfolk Island Pine (*Araucaria*) is, I think, the most beautiful of all decorative plants. Its dignity, simplicity and beautiful plume-like foliage of clear soft green, lighter at the tips, borne on straight branches that leave the main stem at right angles in whorls at regular intervals, make it unique among house plants. They have become very popular as Christmas gifts, but most of the fine specimens that leave the florist's during the holiday season, find their end, after a few weeks in a gas-tainted, super-heated atmosphere where they are probably half drowned by the excess of water given at the roots, in the ash-barrel. They should, with proper care, last for several years. Keep the air as fresh as possible, the temperature cool, forty-five to fifty at night, and water very sparingly during the winter months. In summer place outdoors in a sheltered spot.

For unfavorable conditions—extreme cold, dry air, dust and smoke—*aspidistras* are the most satisfactory foliage plants. The long flat leaves grow to a height of one and a half to two feet, springing directly from the base of the plant at the soil. They like plenty of water during the summer. The sort most commonly seen (*A. lurida*) has plain dark green leaves, but *A. l. variegata*, with its handsome white striped foliage, is a revelation to those familiar only with the former. *A. punctata* has spotted leaves. The variegated pineapple (*Ananas sativus var.*) is one of the most beautiful and probably the most satisfactory for use in the house, of all the variegated leaved foliage plants. The broad, tough, sword-shaped leaves, two to three feet long, rise from the center of the plant in habit similar to the screw pine (*Pandanus*), and are beautifully variegated with bands of light yellow on either side of the dark green center.



The leaves of the dracænas give an almost fountain-like effect



The araucaria requires comparative coolness

The screw pine (*Pandanus*) is another favorite decorative plant, easily grown. The leaves are two or three feet long and come out spirally, as the name indicates. As they get older they bend down gracefully, giving a very pleasing effect. The soil for *Pandanus* should contain a generous amount of sand. Give plenty of water in summer, little in winter, and be sure that none of it lodges in the axils of the leaves, as rot is very easily induced. New plants are produced from suckers at the base of the old ones.

Pandanus utilis is the variety most commonly seen. *P. Veitchii*, dark green, bordered with broad stripes of pure white, is much more decorative, a really beautiful plant. *P. Sanderi* is another good sort, with golden yellow coloring, that should be given a trial.

Farfugium grande, better known as Leopard Plant, has handsome dark green leaves marked with yellow. It is of the easiest culture, standing zero weather. Old plants may be divided in spring and rooted in sand. There is a newer variety with white spots, very beautiful. The *Farfugium* is now more commonly listed as *Senecio Kœmpferi*.



The thatch-leaf palm is one of the hardiest of all house plants of its class

Another plant which I consider excellent for house use, but which is usually left to die in the vases or to go back to the florist's after its summer service outdoors, is *Dracœna indivisa*. The long, narrow, graceful foliage, producing the most fountain-like effect of any decorative plant, and its extreme hardiness, should make it much more popular as a house plant. As I write there is a large specimen on the desk above me, a few of its gracefully poised leaves swaying gently in the draft from the lamp, which is the pride of our winter garden. I would by all means advise every plant lover to try one. *D. fragrans* also makes a most satisfactory house plant.

The other plant to which I referred above, is the "silk oak." It is grown with the greatest ease and makes an extremely graceful, beautiful plant, either by itself or as a center for fern dishes, etc. Sow in March and grow on, shifting frequently.

The plant which probably has the surest claim to being the most popular house plant is the rubber plant (*Ficus elastica*). At least part of the secret of its success undoubtedly lies in the fact that—almost literally—you cannot kill it. But that is no excuse for abusing it, as there is all the difference in the world between a well-cared-for, symmetrical plant and one of the semi-denuded, lopsided, spotted-leaved plants one so frequently sees, and than which, as far as ornamentation is concerned, an empty pot would be far more decorative.

The rubber requires—and deserves—a good rich soil, and in the spring, summer and fall, all the water that the soil will keep absorbed. Give less in winter, as an excess at this time

(*Continued on page* 126)



A Page of Old Lanterns

IN the days before public service corporations, the lantern was lamp and chandelier and street light. For there was no systematic street lighting prior to the enactment of 1774 which ordered lanterns for the streets of Boston. These illustrations show characteristic forms from several Salem collections. The materials of their construction are brass and iron, and the source of illumination was candles at first, but after 1774 whale oil lamps were used. Those of the bull's eye type were carried by watchmen, while the examples with bail handles were hung in the spacious hallways and carried by the citizens at night. The iron perforated type shown in the lower right hand picture, known as "Pinched" or latterly as the "Paul Revere" lantern, shed little more than a glow through holes punched in the iron and burred on the outside. To-day old lanterns may be used within the house, but they are especially applicable as porch lights. It is a simple matter to substitute the electric light for the old-fashioned illumination.

Photographs by M. H. Northend



The stone garage has the advantage of being more fireproof than one of frame construction, and it often has greater architectural worth



Another type of construction which is especially harmonious with the medium-sized half-timber house. The entrance is interesting

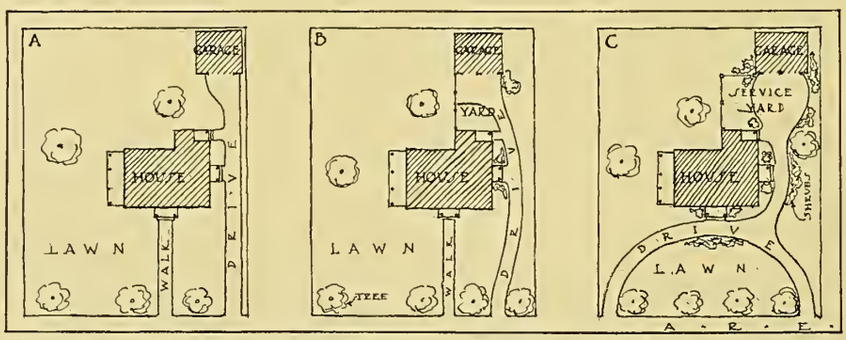
Serviceable Garages of Good Design

STYLE, LOCATION AND APPROACHES IN HARMONY WITH THE ARCHITECTURAL FEATURES OF YOUR PLACE—FIREPROOF CONSTRUCTION—EQUIPMENT TO FACILITATE CARE AND PROLONG THE LIFE OF THE CAR

BY A. RAYMOND ELLIS

Photographs by the Author and Others

THE location and building of a garage is of more importance than one usually supposes, on account of the architectural relation of the building to your house and its general effect upon the neighborhood. Just a shed somewhere in the background seems to be the logical conclusion; but there are several important conditions that should govern this. First, the drive must be located conveniently to the entrance of the house, then it should swing or curve gracefully to the garage and not run in a straight line as it often does from the street to the garage, as in Diagram A. The vista will be more effective if the garage is placed at the end of a curved drive so that shrubs may intervene and break the view, with a screen of foliage intervening to soften the lines of the building, as in Diagram B. The shrubs may be in the foreground and still serve their purpose of breaking the straight lines and adding beauty to the vista. Diagram C illustrates a better arrangement, frequently used where there is plenty of room, with the house set well back from the street. If there is plenty of room the garage may be so placed that part of it will be hidden back of the house, as in Diagram B, screened with shrubs and foliage at the sides, giving just a glimpse of the low roof with good effect. The larger the lot the more opportunity to locate it prettily and in connection with the service yard, as in Diagram C. The location and inward view are very important, and if some study is given to this the result will be the better for it. These three diagrams should illustrate the usual conditions entering into the garage problem.



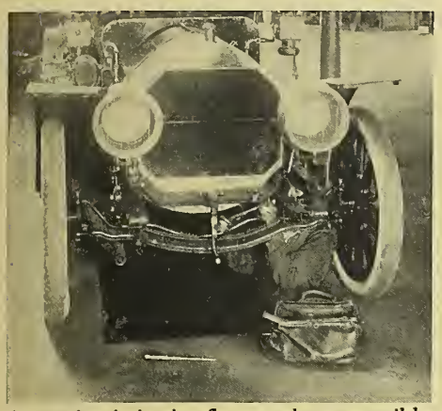
Three types of garage entrance driveways. The one on the left is too straight, but the others are more attractive



A small, formal garage of reinforced concrete construction



This type is adapted to housing more than a single car



A repair pit in the floor makes accessible the car's under body

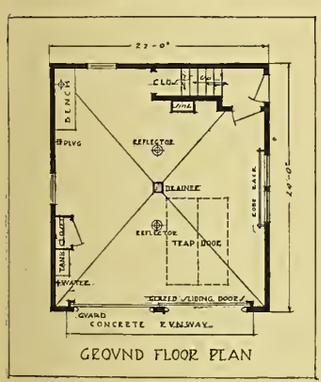
There is considerable space in the ordinary eight-foot cellar that is not utilized, and in two cases I have used this for a garage. In each case the land sloped sharply toward the rear of the house, so that the ground at the back was a little below the cellar floor. The height of a garage ceiling is usually ten feet, therefore the floor of the garage was two feet below the cellar floor. The house was high enough above the street sewer, so that the garage could be drained into it, but this could have been taken care of by a dry well if the location had not been as described. The cement floor was laid on the ground, and the garage was completely shut off from the cellar with brick walls and a fire door. The ceiling above was of reinforced concrete. In a new house, if the ground slopes to the rear, it is usually very easy to utilize this space for a garage. It is undoubtedly economical and convenient on account of the centralization of light, heat, power and service. A garage as part of the house is particularly convenient for the owner who drives his own car or for the woman who uses an electric vehicle. It might not be advisable for three or four cars, unless the house were very large and had an ell, the basement of which could be used for this purpose.

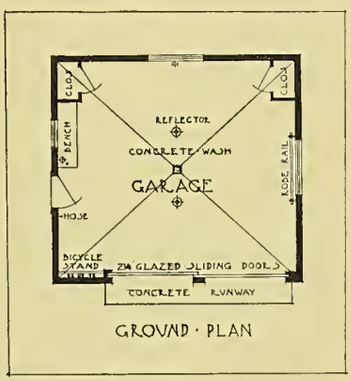
The design of the garage will, of course, correspond to the style of the house as far as is practical. The garage affords as much architectural opportunity as the stable ever did. If the house is old style, some predominating feature may be repeated, perhaps the same kind of roof material or color may be incorporated in the structure to show its relation to the house, unless the location is so far away that this can be safely disregarded; but even then do not vary the style of building on one estate. Further than this, the style of a garage may safely be left to your architect, who is competent to take care of this part adequately; but you must realize the requirements and importance of the garage in order not to hamper him unduly.

The garage should be fireproof, to prevent the spread of fire in case the gasolene tank leaks and vaporizes, or oil-soaked waste catches fire, starting an incipient blaze which may be easily put out if the surrounding material is not of such an inflammable nature as to spread it; the result is the saving of both the cars and the building. An explosion is not probable unless the gas vaporizes in confinement and the blaze spreads rapidly, enveloping the car. If the garage is frame and is close to frame buildings it is a hazard and endangers all the surrounding property. The fire insurance companies require that the tank containing the gasolene shall be buried at



The roof lines and appearance of the garage continue house scheme

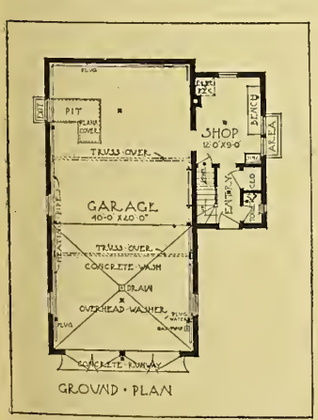




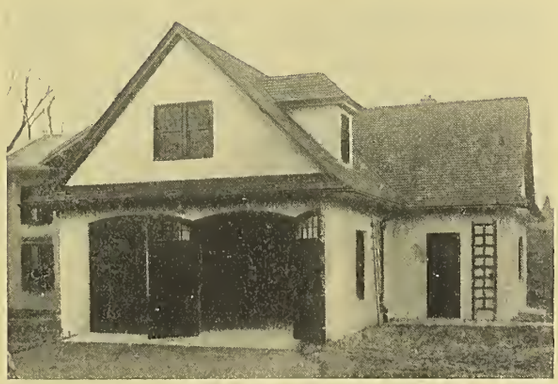
The left hand plan is that of the garage shown above, while the other illustrates the building in the lower right hand corner of the page



A basement garage entered from the service yard



The floor plan of the garage adjoining it



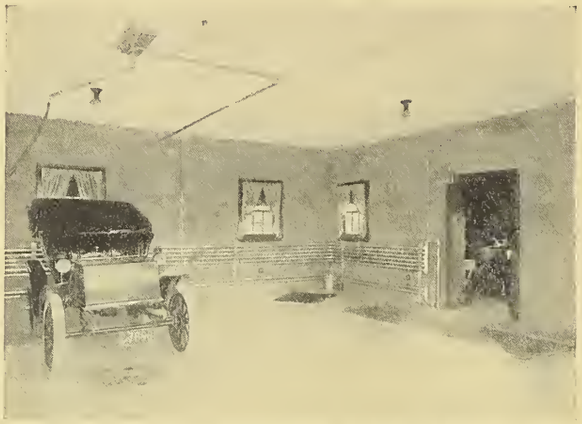
A good fireproof brick and stucco type having a shop on one side



This frame and stucco style is designed to hold two automobiles

least ten or fifteen feet away from any building, and two or three feet below the ground, filled outside through a tube with cap and lock six inches above the ground.

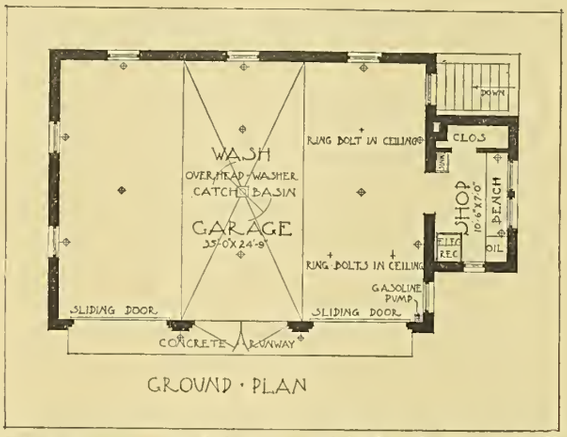
The exterior walls may be of stone, brick, concrete or terra-cotta tile, plastered on both sides. The interior partitions should be of terra-cotta tile plastered, or of metal studs and wire lath plastered on both sides like the exteriors. The foundations should be of concrete. The concrete floor should be built on cinder fill to drain to a central trap, and this trap should collect all sand and grease, so that they can be easily cleaned out. The ceiling should be of reinforced metal lath or reinforced concrete beams and terra-cotta tile plastered. If the second floor is to be used for storage or living quarters, or any weight must be supported by it, steel beams and reinforced concrete should be used. If the roof is a flat one it may be covered with tin, tar or gravel, and with slate or tile if it is a pitched roof of frame construction. The second floor ceiling being fireproof, there is little danger of fire being communicated to the loft above.

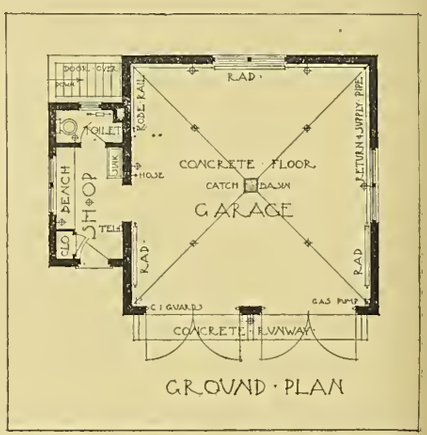


An interior showing overhead washer, heating pipes and wall lights near the floor



This fireproof garage of reinforced concrete is a good example of the more pretentious type





The arrangement of the upper right hand garage is illustrated by the larger plan, while the smaller one applies to the photograph below it

If an independent heating plant is used, it should have no connection with the garage. Gasolene vapors are heavier than air, and consequently seek a lower level. If the boiler-room were connected with the garage, it might become filled with gasolene vapors that would explode when they came in contact with the fire.

Frame garages may be made slow-burning if the floor laid on the ground is of concrete and the inside of the garage proper covered with metal lath or plaster board, over which are applied two thick coats of asbestos plaster. This is retardent to fire and fairly fireproof when threatened with an incipient blaze, but it would probably disintegrate under a concentrated heat, letting the flames through.

The garage should be heated by steam or hot water with the boiler located in a small cellar built under one corner, or if it is close to the house and the house boiler is large enough and below the level of the garage, a main may be carried over, laid in tile and protected with magnesia covering. The small boiler-room may be built either in the basement or at one side of the garage, having an independent entrance from without.

Every garage should contain a toilet-room and hot and cold water, which is usually carried over from the house in the trench with the heating pipes, but laid well below the line of frost. In a good many cases the drain of the garage is connected with the house drain, the sewerage passing through the house to the sewer in the street. There are, of course, some cases where the garage may be nearer the street than the house, so that it would be advisable to have it drain into the main sewer and take the



Another example of fireproof construction. Here the brick walls are plastered on the inside

water and electricity from the main street supply. Where garages are placed back of houses the heating, lighting and sewerage should be a continuation of the house system if possible. A cesspool may be resorted to where there is no sewer. If the conductors on the house are taken into a sewerage system with cast-iron pipes, the garage sewer can be connected at the bottom of the conductor where it passes through the house wall. There should also be hose cocks and an overhead washer in every garage for washing cars. A telephone from the house with the wires laid in an underground trench, should not be neglected.

Electricity is required for lighting, to furnish power for the

(*Continued on page* 133)



From the rear is shown an interesting adaptation of the gambrel roof to a house that is narrow in proportion to its length

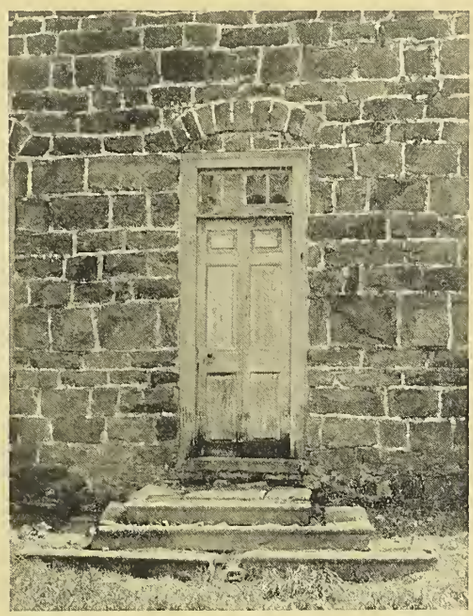


Between the two rows of narrow windows are courses of shaped stones that offer a pleasing variety in the design

Old Philadelphia Houses, II. Graeme Park, Horsham

GRAEME Park, in Horsham Township, near the Doylestown and Willow Grove Turnpike, is one of the famous old houses of the Philadelphia neighborhood. It was begun in 1721 by Sir William Keith, one of the Colonial governors of Pennsylvania, and finished the following year. Here Sir William lived in great state, maintaining a retinue of servants and driving to the city whenever he had occasion to go thither, with his coach and four with outriders in truly regal fashion.

The house was in keeping with the manorial mode of life maintained by the baronet. Besides the main building shown in the illustration, there were detached wings on each side, in which were the quarters for the servants, the kitchens and the various domestic offices. These side buildings disappeared many years ago, and the whole place, unoccupied for a long period, has fallen into decay though this is not by any means irreparable.



Even in the photograph the color and fabric effect of the field stones are apparent

The front of the house is over sixty feet long, and it has a depth of twenty-five feet. The walls of rich brown field stone, carefully laid and fitted, are more than two feet thick, and over the doors and windows, tall and narrow in proportion, as was the style at the time of erection, selected stones are laid in flattened arches of the same type as those at Stenton. The comparison is interesting between Stenton, the brick house, and Graeme Park, the stone house, of almost the same date.

The great hall or parlor at the north end of the building is twenty-one feet square. Its walls are paneled and wainscoted from floor to ceiling, a height of fourteen feet. In the hall the fireplace is faced with marble fetched overseas; in the other rooms Dutch tiles are used for facing. There are three rooms on each floor,

(*Continued on page* 133)



Fine Colonial detail is evident in the rooms, especially about the great fireplace and mantel and in the wainscoted walls



Although these doors are not symmetrically placed relative to the fireplace, yet their design gives a sense of balance

THE HUNDRED PER CENT GARDEN

THE FIRST TWENTY PER CENT—SOWING SEEDS INDOORS—THE CHOICE OF SEEDS—GETTING AN EARLY START; SOIL; A SMALL GARDEN PLAN

BY F. F. ROCKWELL

NOTE: *Heretofore the home garden has been looked upon by many people as more or less of a hobby, and deserving only as much attention as one usually gives to the pursuit of recreation. That it deserves to be taken up seriously, studied in all its details, and developed to the limit of efficiency, is a new presentation of the subject. How to have the very best garden possible, on a business basis, is the theme of the present articles, which take up carefully and practically one detail after another in natural succession, to the completion of the hundred per cent. garden. This series gives you concretely all the pleasures and profits of gardening.*

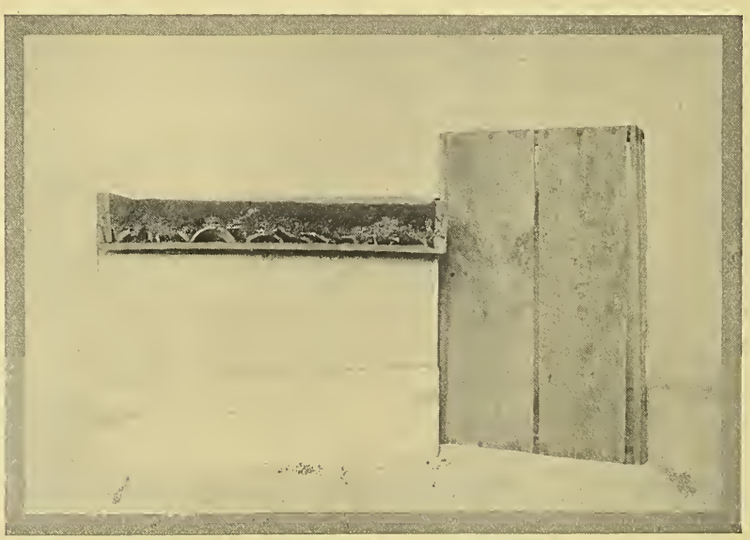
NEGLECTING all personal delight and the benefit to health that accrues from gardening, one finds this year many potent arguments for growing vegetables. A few of these practical considerations should induce the hundreds of readers of this magazine who are in the position to engage in truck gardening. Though the prices of food stuffs are higher than ever, the means available to the home gardener for getting good crops with a small amount of labor are greater than before. Simply on the basis of business economy everyone should grow for himself a plentiful supply of vegetables that should provide the summer supply and well into the winter as well.

Several recent developments have so enlarged the possibilities that the term "new gardening" is not undeservedly used. The improvements tend to certify results, and perhaps one of the chief aids to success is a new and practical system of irrigation as suitable for the fifty by a hundred foot garden as for the large truck farm. This modern irrigation will do more to revolutionize gardening on a small scale than any other mechanical invention, plant introduction or cultural discovery of the last two decades; it will do as much to make garden results certain as the wheel hoe and seed drill did to make garden labor less. It is practically automatic in its operation, and almost the whole cost of equipment for a garden 50 x 100 feet would be two hundred feet of three-quarter-inch galvanized pipe at six to nine cents a foot (according to market prices); fifty brass spray nozzles at five cents, and two patent unions and handles at one dollar and eighty cents each. With this equipment you can get more out of that garden in one season than you did before in two or three years, especially since the schedule of companion crops and succession crops may be adhered to by the assistance of this artificial rain.

Improvement in varieties also has increased the possible profit of the home gardener, for where the private planter gets better products and can use varieties that occupy less space and produce earlier, the advantage to the professional gardener is taken away in competition with competitors. Lower cost of production is effected through a better knowledge of fertilizers. Besides, good seeds and strong plants of much better quality than ever before are at the service of the home gardener.

With these aids and inducements to gardening in mind, let us consider the first step toward success, the preparation of the right kind of soil.

Proper soil for starting seeds is light, friable and quick. I believe that the biggest part of the trouble people have in starting seeds is due to carelessness on this point. Thinking that garden soil "will do," they take no further pains, and when, after careful watering, plenty of heat and the specified number of days' time, only a few scattered and crooked weaklings manage to struggle up through the crusted surface of the pan or box, the seedsman and the magazine writer come in for equal shares of blame. You can make a soil of the proper mechanical condition as follows: Take some dirt from the bottom of a pile of old, rotted sods or rubbish, or some light garden soil; add to it about half its bulk of leaf-mold from the woods, or chip dirt from the bottom of the wood pile, and, if available, some sand, enough to "cut" it so that it crumbles apart readily when compressed in the hand—say, a peck of sand to a bushel of loam and two pecks of leaf mold. Mix together and sift through a sieve with meshes the size of a coal ash sifter or smaller.



In the loosely boarded box section place crocking and cover with sphagnum moss—above this put the prepared soil

At this season of the year, however, it may not be possible for you to get these things—in which case there are two alternatives left you; first (and easiest), go to a local florist and get a bushel of prepared soil, such as he uses for starting seeds. Failing in

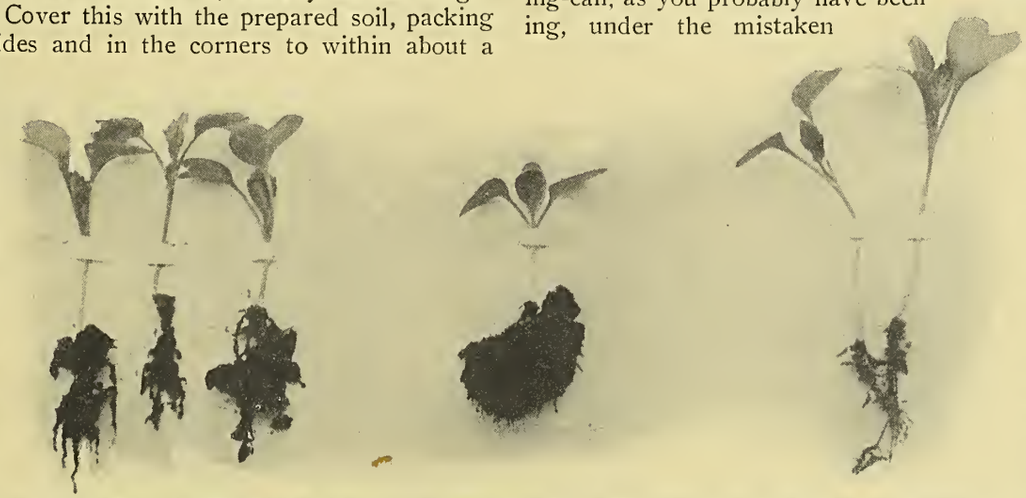
this, get a pick, break up a few chunks of garden soil, and half a bagful of the semi-frozen rotted leaves and twigs which you can easily get in some hollow in the woods, and place them near the furnace to thaw out, and partly dry out. Old soil and manure taken from a last year's hotbed will answer the purpose finely.



Do not crowd the flats with too many seedlings and look out for "damping off"

Flats are the most convenient things to handle vegetable seedlings in. Seed pans are all right for such fine seed as many flowers have, but a common, rough-finished cracker-box flat will give you better results with your vegetable seeds. Get a couple of empty boxes, with their covers, from your grocer, mark them off into two-inch sections, take out the nails and clamps that come on the marks, and saw them up. When putting on the bottoms, leave cracks to facilitate perfect drainage.

In the bottom of the flat place a layer of some rough material to serve as water drain, moisture-reservoir, and to save your supply of prepared soil. In the photograph, pieces of broken pots, covered with sphagnum moss are shown, but any similar roughage will do as well. Cover this with the prepared soil, packing firmly down along sides and in the corners to within about a quarter of an inch of the top of the flat, press the surface smooth with a piece of board, mark off rows about two inches apart with a small pointed stick, and all is ready.



At the left are seedlings just ready for transplanting; in the center one with the proper mass of rootlets and adhering soil; at the right seedlings too lanky—set them deep when transplanted

Right here is where the beginner usually makes the mistake of planting enough cabbage or lettuce to serve him for about five years—if the plants would keep. In an ordinary cracker-box flat (about 13 by 19) there will be room for eight or nine rows. Each row should give from thirty-five to a hundred seedlings. Suppose we call it fifty for an average. Then the following planting of early vegetables would be about right for a medium-sized garden, and the employment of similar schemes have resulted well for the vegetable grower.

First Planting (February 1st to March 1st).

Cabbage	Jersey Wakefield	½ row
	All-head Early	½ row
	Succession	1 row
		2 rows
Cauliflower (Snowball)		1 row
Lettuce	Grand Rapids	1 row
	Wayahead	1 row
		2 rows
Beets (Early Model)		2 rows
Onions	Prizetaker	1 row
	Ailsa Craig	1 row
		2 rows

For celery and parsley, both of which take a very long time to come up, a seed pan, or cigar box, or end of a flat which could be left undisturbed when the other plants were taken out, might do.

For a second planting, mostly of the warm-blooded vegetables, a flat might be laid out as follows. (These will probably not average as many plants to the row as the others).

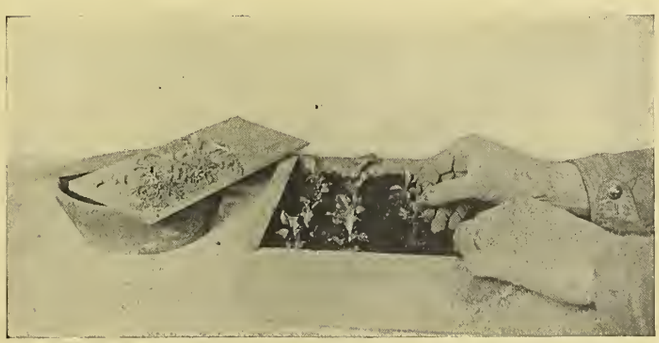
Tomatoes	Chalks Early Jewel	½ row
	Dwarf Giant	½ row
	Matchless	1 row
		2 rows
Egg-Plant (Black Beauty)		1 row
Pepper	Neapolitan Early	½ row
	Ruby King	½ row
	Chinese Giant	½ row
		1½ rows
Okra (Perfected Perkins)		½ row
Lettuce	Big Boston	1 row
	Brittle Ice or New York	1 row
		2 rows
Celery (Winter Queen)		2 rows

These varieties mentioned above are all good sorts, and selected, where more than one of a kind is suggested, with the idea of furnishing a succession. You may know others which you like better.

The seed should be scattered evenly but thinly—eight or ten to the inch—in the miniature drill, which should be rather broad and very shallow. Press them in firmly, *carefully tag each row,* and then cover about a quarter of an inch deep, pressing the whole surface down lightly.

Right here comes one of the most important kinks of the plant-starting art. Instead of giving the flat a dousing with the watering-can, as you probably have been in the habit of doing, under the mistaken idea that it would be good for the plants, set the whole flat in the sink or bathtub and let in a little water, just enough to come a third of the way up the sides. Here let it soak until the moisture coming up through from the bottom shows on the surface of the soil, turning the latter dark in color. Then let it drain until it stops dripping. In this way you will have saturated the soil in the most thorough manner, without washing out or packing the surface soil in the slightest.

To secure quick germination, seeds should be given "bottom heat." As it does not make any difference how dark a place they are in until they sprout, the flat may be placed over a radiator, on the back of the kitchen range or on the hot-air or hot-water pipes. Any surface upon which you can bear to rest your hand will not be too hot, as the heat will not be readily conducted to the surface of the soil. Cover the box with a loose-fitting pane of glass, to protect from mice and to conserve the moisture and keep the surface of the soil from getting hard.



Place the seedlings to be transplanted on a board; make holes for them with the fingers and press them firmly into place

In a few days the cabbage and lettuce seed will be up, followed soon by the others. The moment they break ground they will have to be supplied with all the light

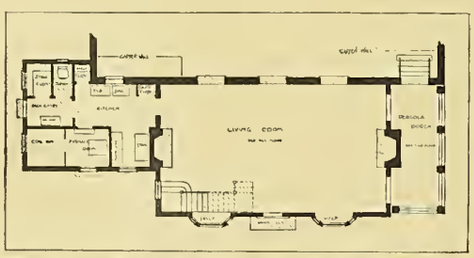
(*Continued on page* 130)

It is seldom that the small house is so attractive in its appearance and so homelike in its appeal as is this one finished with clapboards. Privacy was the chief desideratum, and the grounds are so secluded that they are really an annex to the house rooms

THE HOME OF DR. THEODORE ABBOTT, CORNWALL, NEW YORK

Parker Morse Hooper

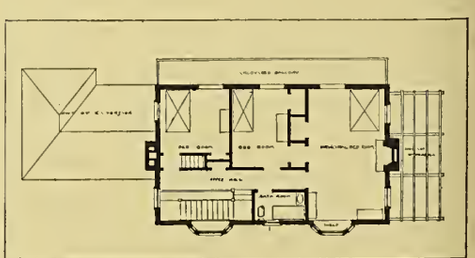
architect



The kitchen wing is quite distinct from the living quarters of the house



The house is absolutely simple, yet has enough variety to make it interesting



The uncovered balcony on the second floor may be reached from any of the bedrooms



The lawn beneath the projecting balcony serves the purpose of a porch, but there is no porch proper on the house



The living-room, which is also used as a dining-room, is floored with red tile laid in interesting fashion lending color to the apartment



A garden wall forms an elbow at either side at the rear of the house enclosing a luxuriant growth. The French windows and the door open directly on the garden and a balcony overlooks it, making it seem another addition to the rooms. The balcony on this side is distinctly interesting



Inside the House

Timely Suggestions and Answers to Correspondents



The Editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope

Floral Decoration at Home

ALMOST everyone has, at some time or another, found an occasion which required a floral decoration for the house, but unfortunately, at just such a time, the lack of the technical skill of the professional florist has raised obstacles that were not easily overcome. Given the same quantity and quality of stock to work with, the chances are that the amateur would do a better piece of work than the professional, but the latter's experience and knowledge of the mechanical part of the work give him the advantage. The professional's work is even; that is, the flowers seem equally fresh in all parts of the house. The amateur's work, on the contrary, is apt to be spotty, in that the flowers last placed will look better than those arranged earlier. Again the florist works with a rush, keeping his perishable stock in reserve until the last possible moment, something that cannot be done offhand.

Moss is the florist's standby. He first soaks it in water and after squeezing it binds it in forms to hold the flowers. For a mantel decoration, for instance, he first makes a mound of moss at the back and into this he sticks the flowers, using long stems if the effect is to be high. No wire is used, but the stems are pointed with a sharp knife as they are to be used, not before. The moss, if tied upon a frame, or even tightly packed, will hold the flowers in place and keep them fresh for a long time. In front of the moss, plants of maidenhair fern might be used, with the pots turned on their sides. This shows the top of the plant and makes a striking decoration. For a doorway he uses moss tied into a frame of poultry wire of small mesh. The moss will keep in place and may be placed safely in any position. Where a massed effect is desired flowers can be stuck into the earth of the potted plants and other plants banked about, giving an immediate and natural effect. To do this the stems must be long.

The florist will use all sorts of greenery provided it can be had in long streamers, and for this purpose there is nothing that can be used with better effect than the rambler roses if they happen to be in flower. When cut in long streamers the ends of which can be put in bottles of water concealed by the foliage, good results are effected. The bottle idea works out well and will often make success where little might be expected. Roses used in this manner are particularly effective, and the ramblers are available if not cut too long before being used.

The object the florist keeps in view is the care of his stock. He tries to keep it out of the light as long as possible, and while it must be near at hand he searches out a cool spot in the cellar and piles the flowers on the floor, covering them with dampened paper. If flowers are taken directly from a very cold ice chest into a warm atmosphere they are apt to wilt much more quickly than if taken from a cool place like a cellar.



Long rambler rose streamers in water holders are effective in doorways

Machine-Sewed Carpet Rags

RAG rugs woven from new fabrics are not nearly so delightful as those which are the result of family saving. But new cloth may be machine-sewed to advantage, making a smoother filling than if cut back and forth or in strips to be sewed by hand. For instance, two yards of new fabric may be joined end to end, one edge lapping the other, and missing exact jointure by the width of a carpet rag. Begin cutting or tearing at this left-out notch, after sewing with a short stitch three times along the lap. By cutting through the lap there is an even, continuous strand that will not break at the seams nor make a knotty bulge in the weaving.

Old cloth can be treated in the same way. Indeed, with fairly large pieces one can sew a long strip together, varying colors and proportioning them so as to make beautiful cloudings in the woven carpet. Join the ends as for new cloth, cut or tear, always cutting through the seams, and wind into balls. But often there are strips too narrow for such joining. Cut them to carpet rag size, laying each color to itself, and proportioning the width cut to the bulk of the material. If thick and thin stuffs must go in the same ball cut the thin ones to be folded double or treble. Next cut stiff paper into strips an inch and a half wide, lay the end of a strip under the machine foot, lap two rag ends on top of it, and sew them together through the paper. Turn the free end of one sewed rag so as to lie on the paper, lap a fresh bit flat upon it, sew through, and repeat till the strip is full. Now turn the paper around and sew a second row about half an inch from the first. Finish by sewing a third row. After all the rags are sewed pull away the paper strips, cut through the stitches between the rags and wind in smooth balls. Thin stuffs must be folded for sewing, taking care that the folds run straight. Arrange colors so as to avoid discords.

Radiator Paints

THERE is more to the efficiency of a radiator than the mere make or size of the apparatus itself. By varying the kind and color of the paint on your radiator you can increase or decrease quite materially the amount of heat given off by the latter, as the following facts demonstrate. Two coats of black asphaltum

paint increase the amount of heat given off six per cent. Two coats of white lead will cause an increase of nine per cent. in the heat, while rough bronzing gives about the same results as black paint. On the other hand, one coat of glossy white will reduce the efficiency of the radiator ten per cent. One to three coats of bronze paint do not materially affect the quantity of heat emitted, but additional frequent application of bronze operate to decrease the efficiency. The white enamel so extensively used on radiators in lavatories and bathrooms very materially reduces the effectiveness of a radiator.

To Clean Unlacquered Brass

HERE are several ways, old but good. For tarnished mounts upon old furniture tie a pinch of fine salt in a soft, thick cloth, moisten slightly with sharp vinegar and rub hard, taking care not to touch the wood with the salt swab. Polish, by rubbing until hot, with a flannel dipped in fine wood ashes—it gives a soft luster otherwise not obtainable. Brass candlesticks, dulled, not tarnished, need to be washed clean in hot soda water, dried and rubbed with wood ashes. Smear hand rails, etc., with salt wet with vinegar, let stand five minutes, then rub off and polish with either ashes or fine chalk on a thick cloth.

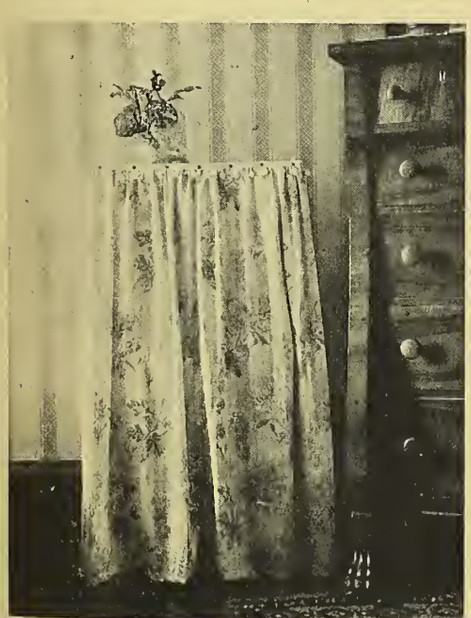
A Convenient Shelf Closet

THE closet of my nine by ten bedroom is so small that it can be used only as a linen press, and as storage space for boxes and so forth was badly needed I procured an inch thick board of redwood, two feet wide and long enough to fit into the end of the room over door and window, the frames of which supported one end and a strong cleat the other. As the ceiling was high this left a space of two feet above the shelf. To protect the contents of the shelf from dust as well as to hide the unsightly array, I curtained the space by tacking with brass headed tacks onto the side of an inch strip of pine, a series of cream colored cheesecloth curtains. The inch strip of pine had previously been nailed with long wire nails to the ceiling on a line with the front edge of the shelf. Each curtain section was



A ceiling closet is made by a redwood board above door and window

finished with hem and tiny heading at top, was slightly gathered, lapped one inch over the next and stitched firmly to a strip of strong tape as long as the entire length of the shelf. They were left disconnected on the sides for ease in handling. This shelf closet has proved a great convenience, taking up no space which could be used in any other way and interfering in no way with the arrangement of furniture or lighting of the room.



Cretonne and a board change the radiator into an ornamental shelf

Hiding the Unsightly Radiator

IT is hard to imagine anything less useful and less ornamental than a steam radiator during the summer months. The radiator in our guest-room is in a very conspicuous place where no possible arrangement of furniture can hide it from view.

It was the lady of the house who first thought of a plan to convert the objectionable object into a thing of beauty and utility. A yard and a quarter of cretonne, a yard of cotton-ball fringe, an odd piece of board and a few upholsterers' tacks were all the material needed to make the cover shown in the first of the two photographs.

The board was cut to fit against the wall and extend half an inch beyond the front of the radiator. It was left long enough to extend out over the valve joint. Cleats were fastened edgewise across the bottom of the board to fit down between the sections of the radiator to keep it from slipping.

A piece of the cretonne was stretched over the top of the board and tacked down smooth. The balance of the cretonne was hemmed at top and bottom and gathered on a string run through the top hem. The string was fastened at the back of one end of the board and stretched around the front and fastened again at the back of the other end. With the fullness evenly distributed, the fringe was tacked down on top of the cretonne with gilt-headed tacks. The radiator is completely hidden and the cover forms a useful shelf, at a total cost of about fifty cents.

Our success with this radiator fired the imagination of the man of the house, who, after making a crude sketch, sent an order to the lumber mill calling for

18 feet of 9″ x ⅞″ oak
7 " " 3″ x ⅞″ "
4 " " 10″ x ⅞″ "

This he constructed into a piece of furniture resembling a set of shelves, with all but the upper shelf and top concealed behind a curtain. When the carpenter work was done the oak was given a coat of fumed oak wood dye, and when dry was rubbed down with furniture wax, giving a rich, dull polish.

The curtain is made of aurora cloth, of which one and one-quarter yards—fifty-inch width—was required. It is supported on a brass curtain rod.

In the summer time this useful piece of furniture is placed over the radiator, which is entirely hidden behind the curtain. When the steam is turned on it is moved to another part of the living-room and fitted with two additional shelves for which cleats are provided.

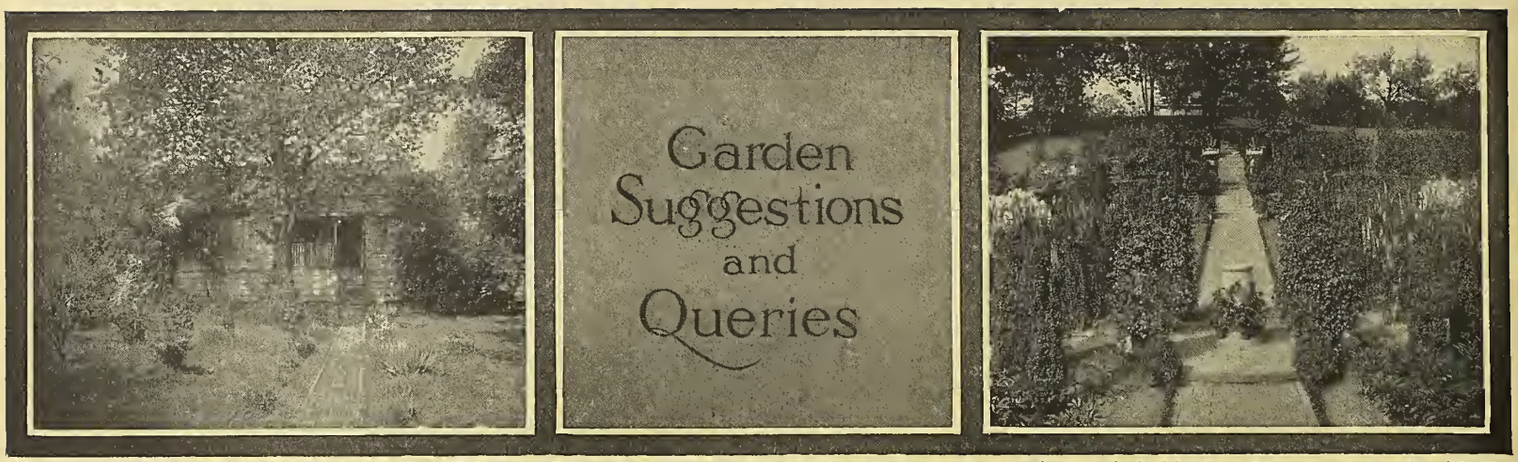
The cost of this piece of furniture was

Lumber	$2.50
Hardware	.20
Stain and wax (about)	.25
Curtain material	1.25
	$4.20

To look at these covered radiators when not in use one would not imagine that behind the curtains are unsightly shapes of metal. They are most successfully concealed, and surely the cost is light.



This piece of furniture can be fitted over the radiator when not in use



Conducted by
F. F. Rockwell

The Editor will be glad to answer subscribers' queries pertaining to individual problems connected with the garden and grounds. When a direct personal reply is desired please enclose a self-addressed stamped envelope

First Steps Toward the Vegetable Garden

WHILE the garden does not take a place of first importance in one's mind when the snow is piled high in the front yard, there is one matter concerning it that should be considered now. This is the matter of seed buying, and upon it depend your chances of enjoying a perfect garden next summer.

Take out your seed catalogues and your last year's garden records—if you haven't any, take the lesson to heart and make one this year—and go through them, checking up the varieties and amounts you want and making a temporary list. If you do not do this you will find at the last minute that you have too much of some varieties and too little of others.

Here are the amounts of the various seeds and plants required for a fifty-foot row, which is a convenient length:

Asparagus, 50; asparagus seed, 1 oz.; bean, bush, 1 pt.; bean, pole, ½ pt.; beet, 1 oz.; broccoli, 35; borecole (kale), 25; brussels sprouts, 35; cabbage, early, 35; cabbage, late, 20; carrot, ½ oz.; cauliflower, 35; celery, 100; corn, ½ pt.; cucumber, ½ oz.; eggplant, 25; endive, ½ oz.; kale, 25; kohl-rabi, ¼; lettuce, 50; lettuce seed, ¼ oz.; leek, ½ oz.; melon, musk, ½ oz.; melon, water, ½ oz.; onion, ½ oz.; okra, ½ oz.; parsley, ¼ oz.; parsnip, ¼ oz.; peas, 1 pt.; pepper, 25; potato, ½ pk.; pumpkin, ¼ oz.; rhubarb, 25-20; radish, ½ oz.; salsify ¼ oz.; spinach, ½ oz.; squash, ¼ oz.; tomato, 20-15, and turnip, ¼.

Here are some good, standard varieties, that you get from most reliable seedsmen, and that have detailed descriptions in the catalogues:

Asparagus—Palmetto (heaviest yielder), Giant Argenteuil, Barris Mammoth.

Beans (Bush)—Early Red Valentine, Stringless Greenpod, Bountiful, Brittle Wax, Rust-proof Golden Wax, Stringless Refugee, Burpee Improved Bush Lima.

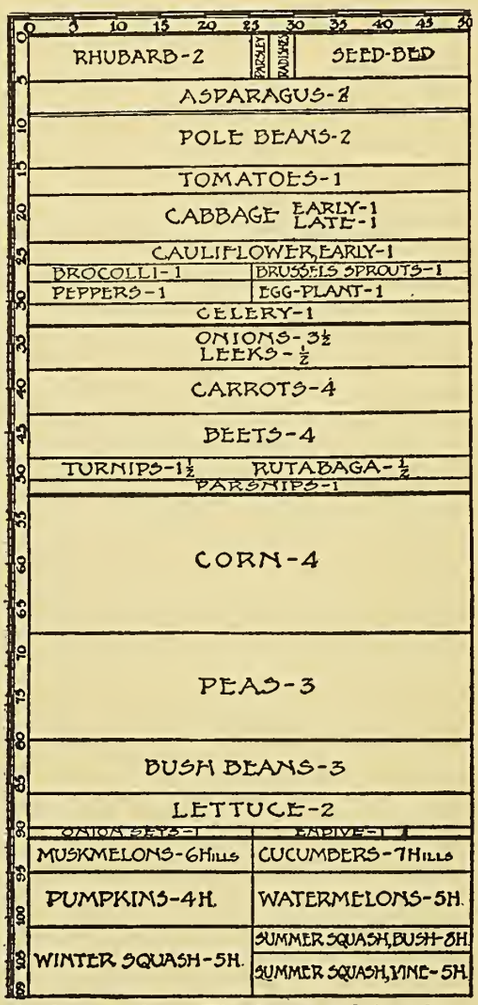
Beans (Pole)—White-seeded Kentucky Wonder (Burgers Green Pod), Golden Chester, Sunshine, Horticultural (used in place of pole limas in cold localities), Case Knife, Scarlet Runner, Early Leviathian Lima, Ideal Lima, Giant Podded Lima.

Beets—Early Model (for earliest), Crimson Globe, Columbia.

Brussels Sprouts—Dalkeith, Danish Giant.

Cabbage—Early Jersey Wakefield, Charleston Wakefield, Early Spring, Allhead Early, Glory of Enkhuisen, Succession, Danish Roundhead (for winter), Perfection Savoy (best quality of all).

Carrots—Early Scarlet Horn, Coreless



A planting plan. The figures at left and top indicate the length and distance apart of rows

Cauliflower—Early Snowball, Best-early, Dry Weather.

Celery—White Plume (earliest), Golden Self-blanching (fall), Winter Queen.

Corn—Golden Bantam (earliest and very sweet), one of the several yellow second-earlies, Early Cosmopolitan or Howling Mob, White Evergreen, Country Gentleman, Black Mexican (small, but extra sweet).

Cucumbers—Extra Early White Spine, Davis' Perfect, Fordhook Famous, Vickery's Forcing.

Eggplant—Black Beauty.

Kohl-rabi—White Vienna.

Lettuce—Mignonette, Wayahead, May King (early head varieties), Grand Rapids, Curled Simpson ("loose-head" varieties); Salamander, Hanson, All-season, New York, Brittle-Ice, (for summer months).

Melons (Musk)—Osage (Miller's Cream), Champion Market, Montreal Nutmeg (all large sorts); Rocky Ford (Netted Gem), Fordhook, Hoodoo, Jenny Lind, Paul Rose (small sweet sorts), Henderson's Bush (new "vineless" variety).

Melons (Water)—Cole's Early, Fordhook (early); Ice Cream, Hungarian Honey, Sweetheart, Halbert Honey.

Onions—Silver King (early), Southport White Globe (finest quality), Southport Red Globe, Southport Yellow, Prize-taker (for main crop), Ailsa Craig (largest).

Peas—American Wonder, Nott's Excelsior, Alaska (extra early, but not of best quality), Gradus, Early Morn, British Wonder (early, extra good quality), Boston Unrivalled, Telephone, Champion of England.

Peppers—Early Neapolitan, Ruby King, Chinese Giant, Sweet Mountain.

Radishes—Rapid Red, Early Scarlet Button, Crimson Giant, White Ocicle, Rocket; a large number of other good sorts.

Spinach—Swiss Chard (beet), Lucullus, Victoria, Long-standing, New Zealand (for mid-summer).

Salsify (Oyster Plant)—Mammoth Sandwich, Wisconsin Golden Island.

Squash—White or Yellow Scalloped (bush, extra early); Summer Crookneck, Delicata, Fordhook (second early, vine); Hubbard, Boston Marrow, The Delicious, Heart o' Gold, Simmes Blue Hubbard (winter).

Tomatoes—Chalk's Jewel, Early Freedom, Bonny Best, Earliana, Dwarf Stone, Dwarf Giant, Livingstone's Globe, Matchless.

Turnips—Early White Milan, Petrowski (early), Amber Globe, Purple Top-White Globe, White Egg.

How Much to Plant

SO far, so good, but it is still a problem to determine exactly how much seed of each variety you will need. While some seeds will keep for several years, it is generally better to get fresh ones every season.

First of all, get the size of your garden "over-all." Then figure up the amount of space each vegetable—not each variety—is to be allotted, taking the more important ones, i. e., those which you care most about, first. Vegetables occupying about three feet to the row are pole beans, tomatoes, peas, potatoes, cabbage, cauliflower, egg-plant and Brussels sprouts. They require two feet to the row. Parsnips, bush beans and salsify may be given a foot and a half; in rich soil, however, the beans will require about two feet. Lettuce, beets, carrots, onions, leek and turnips require from twelve to fifteen inches. The "vine" plants, such as cucumbers, squash, melons, both musk and water, require from four to six feet, and celery, if to be banked up with earth, will require about four feet. It can, however, usually be set out where some early crop, such as lettuce, early turnips or peas, has been removed.

If you find you will not have room for all these things, remember that potatoes, late cabbage, turnips, peppers, celery, watermelons, onions and parsnips all stand shipping well, and that you can get these at your grocer's in better quality than such perishable things as sweet corn, lettuce or peas, which must be gathered fresh from the garden to be in perfect condition. The diagram of a small garden will give you a suggestion as to how your own problem may be worked out. In deciding on what varieties of each vegetable to use, remember that many of the extra early sorts, such as smooth peas, early white corn and string beans are not as large or as delicious as the later varieties, and as there frequently is only a few days' difference between the two in the time of maturing, only enough of the former should be planted to assure one or two pickings. Moreover, most of the early varieties "go by" very quickly and if you are careless in choosing them or think too much about the first few weeks of the season and too little about the last, you are likely to find yourself with a supply of tough, over-ripe things on your hands which even the chickens will refuse.



A small apple tree as it appeared before proper pruning and trimming



Judicious pruning and proper care do much toward producing fine fruit

The Ice Crop

EVERY small country place within reach of a lake or ice-pond and also subject to the seasonal holdup of the local ice trust, should have its own small ice-house. It need neither take up much room nor be an unsightly object. A little house twelve feet by twelve will hold several tons, and, aside from being filled, requires no attention throughout the year. The walls should be made double with a dead air space of several inches between them. The spaces do not require any filling with sawdust as the air itself is a non-conductor of heat. If you have to hire labor for the filling with ice, see to it that it is done as soon as the ice is thick enough, as nine or ten inches of the first freezing, clear and hard, will keep longer than twelve or fourteen inches of half frozen slush, etc. Each layer should be tightly packed with sawdust in every chink, to prevent the leaving of air spaces that might cause the sawdust put over the top to run down through later, leaving exposed spots on the surface.

Pruning and Spraying

PRACTICALLY the only work which can be done outside at this time of the year about the garden and grounds, is such spraying and pruning as has not already been done. For the benefit of new readers I repeat briefly some suggestions given before. Apple trees and other fruit trees plagued with the San Jose scale should be sprayed thoroughly, covered all over with lime sulphur wash, extra strong for winter use, or with a diluted miscible oil, made for the purpose.

In pruning cut out all branches that cross or rub each other, and if they are over two inches in diameter be sure to paint over the wound with coal tar. Any broken or diseased parts should be cut out and treated in the same way, and any holes or decaying spots cut out cleanly to live wood and the wound filled with cement, first applying a coat of thin coal tar to soak into the wood. The surface of the filling should also be covered, to prevent its becoming weather cracked.

In spite of reminders and directions we keep putting such things off, and the result is often another season of poor fruit. Remember that much can be done in the way of planning ahead, even though the actual work on the garden may now be limited.



An illustration of the relative extent to which apple tree pruning should be carried

EDITORIAL

THE CULTIVATION OF DISAPPOINTMENT

AS far as the garden is concerned, February is a drear interregnum. Indoors, of course, one starts the embryo of future luxuriance, but in some ways the work is but an aggravation, especially to the eyes impatient for the growing glory of the out-of-doors.

About this time we generally turn to the gardens that spread their beauty through the pages of books. There are many that breathe their perfume perennially, but at no season is it sweeter than at this. Perhaps our choice of authors would not meet with your approval. Maybe Warner and Emerson and Thoreau—why prolong the list—do not awaken your enthusiasm. But we do want your agreement on a little passage that seemed to shine out with such kindly good humor from Stevenson's letters. You know it, perhaps; it contains the best cultural directions for February, so here it is:

". I am no cultivator of disappointments, 'tis an herb that does not grow in my garden; but I get some good crops both of remorse and gratitude. The last I can recommend to all gardeners; it grows best in shiny weather, but once well grown, is very hardy; it does not require much labor; only that the husbandman should smoke his pipe about the flower-plots and admire God's pleasant wonders. Winter green (otherwise known as Resignation, or the "false gratitude plant") springs in much the same soil; is little hardier, if at all; and requires to be so dug about and dunged, that there is little margin left for profit. The variety known as Black Winter green (H. V. Stevensoniana) is rather for ornament than for profit.

"John, do you see that bed of resignation?"—"It's doin' bravely, sir."—"John, I will not have it in my garden; it flatters not the eye and comforts not the stomach; root it out."—"Sir, I hae seen o' them that raise as high as nettles; gran' plants!"—"What then? Were they as tall as alps, if still unsavoury and bleak, what matters it? Out with it, then; and in its place put Laughter and a Good Conceit (that capital home evergreen), and a bush of Flowering Piety—but see it be the flowering sort—the other species is no ornament to any gentleman's Back Garden."

A NEW SUBJECT FOR INVESTIGATION

WHENEVER that elastic composure of ours has become quite settled, when we have become almost blasé and unaffected by the recurrent thrillers of our daily paper, when murders pall and we are thoroughly inured to graft and investigation disclosures, war scares, and political discussion, the versatile journalist springs a new medical discovery upon us and the response is immediate. We have discovered ourselves to be in immediate danger of dread, incurable diseases. Many of the warnings are wise and the care resultant a very good thing, but so often the scare is merely aimed at hysterical natures and the information, "news" merely on account of its bizarre qualities. We do not mean to disparage the work of the good guardians of our health—their warnings persist beyond the stir of blatant headlines. But there are serious abuses not local but universal and these excite no comment perhaps because they are so very, very common. One in particular finds its way even into the circle of the home. It is the evil of improper lighting.

To correct the evils there is no need of vast legal processes. There are no picturesque features of millionaire oppressors of the poor, no deep-dyed villain's sensational disclosures. After this statement many will say the matter must be unimportant; but though its correction needs no trumpeted publicity, its dangers are as real as its remedy simple.

The misuse of illumination gives us irritation at work, it pains and wearies us while we seek rest at home. Most of us labor under the delusion that we are getting good lighting as we increase its brilliance to a flood of light that searches every corner and drives away all shadows. In truth we are driving away comfort and leaving headache, eyestrain and bad temper in its place. There is a chemical change that takes place within our eyes when light enters the retina. That infinitely sensitive organism with its complex system of nerves must constantly readjust itself at every new thing we see and yet we over-exert this readjustment capacity by directing a glare upon our eyes from polished surface and unprotected light source, that scientists describe as many times beyond the normal amount consistent with a healthy condition. It is no wonder that we are overtired or nervous.

Furthermore, by aiming to drive away shadows we make our interiors garish, uninteresting. We have done away with that necessity of art contrast. Everything is of one tone, without highlights, flat and without variety. Besides, by insisting on brilliance, we have rendered negligible the color possibilities of lighting, and its decorative value.

Does this appear exaggerated? In thousands of instances it is no exaggeration. We have cheaper lighting, better lighting, but in many cases we waste our advantages through ignorance.

In another part of this magazine there appears the second article of a series that supplies the much needed information on this subject. Its object is to spread that necessary knowledge of how to obtain the benefits that science has put within our reach in source of light and means of using it. When we become aware that we may heighten the atmosphere of the home by our illumination, gain eye comfort and repose and when we apply the suggested remedies we will find even our dispositions changed for the better.

A REMEDY FOR THE SWOLLEN BUDGET

THERE seems to be at least one direct result of the constantly rising prices: we have a new topic of conversation that bids fair to overshadow that old favorite of ours, the weather. So far as finding a solution for the problem is concerned there is no remedy in sight. Most people wait for some legislative action, or look to the appointment of some commission to readjust costs. Meanwhile the expense grows, and there is little that the individual can do to change the figures of the aggregate high cost of living.

When the question is referred to the family budget, however, the case is different. Though the national figures remain the same, the personal ones can show a decrease. This is particularly true this year, for as spring approaches the planter of the small garden finds himself in a better position than ever to grow produce for his own table that will supply more than his personal needs throughout the summer and fall, and well into the winter. The labor saving tools, the better, hardier and more productive varieties, the recently discovered irrigation system for the small place—these are some of the factors that make it possible for the house owner to receive advantages far above the market gardener whose ultimate profit is determined by competition.

Most of the readers of HOUSE & GARDEN have the opportunity to cultivate a vegetable garden. To them the series entitled "The Hundred Per Cent Garden" is directed in order that they may apply to their home place those same careful economies that they employ in their business. The principles of scientific gardening are not abstruse nor dull learning, and the working out of them is a real pleasure, but we urge every one who may, to put them in operation, for they help to lighten the budget.



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(*Continued from page* 110)

causes the leaves to turn yellow and droop.

As the rubber is more difficult to propagate than most house plants, and since specimens will not get too large for several years, it will be best to get plants from the florist's. It frequently happens, however, that an old plant which has been grown up to a single stem becomes unwieldy and bare at the bottom. In such cases the upper part may be removed by "topping" and the main trunk cut back to within six to eighteen inches of the pot or tub, and water partly withheld until new growth starts. The old stem may thus be transformed into a low bush plant and frequently it makes a very handsome specimen. The topping is performed by making a deep upward slanting cut with a sharp knife, at the point you want in the pot for your new plant. In the cut stuff a little sphagnum moss; remove this after a few days and wash the cut out with warm water, removing the congealed sap. Insert fresh moss, and with strips of soft cloth tie a good handful over the wound. *Keep this moist* constantly until the roots show through the moss, which may be several weeks. Then pot in *moist* earth, not wet, and syringe daily, but do not water the pots for two or three days. Sometimes pots cut in halves and the bottoms partly removed are used to hold the moss in place. August is a good time to propagate.

Ficus elastica is the common rubber plant. The "fiddle-leaved" rubber plant (*F. pandurata*) is another variety now largely grown. It differs from the former in having very broad, blunt leaves, shaped like the head of a fiddle, which are marked by the whitish veins. Two other beautiful plants are *F. Cooperia,* having large leaves with red midribs, and *F. Parcelli,* with leaves marbled with white. They should be given a higher temperature than *F. elastica.*

To add a touch of color to the winter garden, there are two excellent plants which, while not of importance primarily for their foliage, still deserve a place in every collection. The first is the Ardisia—the best red-berried plant for the house. It is a dwarf, with very beautiful dark green foliage. While kept healthy it will be laden constantly with its attractive clusters of berries, one crop lasting over to the next. Seedlings make the best plants, and are readily grown. Sow in January to April, and plants will flower within a year and thereafter be perpetually decorated. Old plants can be topped and make fine specimens. By all means give the Ardisia a place in your collection.

The second is the decorative pepper. Some of the peppers make very attractive pot plants on account of their bright fruit, which is very pretty in all stages of growth from the new green pods, through yellow to bright red. Buy new plants or start from seed in spring. They are easily grown if kept on the warm side of the

house. Celestial and Kaleidoscope are the two kinds best suited for house culture.

The "sensitive plant" (*Mimosa pudica*) is a pretty little green-leaved plant, the never-failing interest in which lies not in its beauty, however, but in the fact that it shrinks and folds up when touched, as though it belonged to the animal kingdom. It is easily grown from seed.

The umbrella plant (*Cyperus*) does well with ordinary care, and is at all times very attractive. The long, slender stems, each surmounted by a number of drooping slender leaves, somewhat resembling the ribs of an umbrella in the way they are held, are thrown up in a thick group from the base of the plant, making a most striking and artistic appearance. Its chief requirement is plenty of water.

While you probably will not have room for all these plants, or even a majority of them, do not be content to stick to the old universally known sorts. While a good specimen of a new variety of palm or rubber may not be as cheap as a geranium, you should take into consideration that it will last several years, and the cost, being thus distributed, is actually very little. A good plant is one of the most lasting, satisfying and worth-while "luxuries" you can treat yourself to—one which you will never be sorry for after you get it.



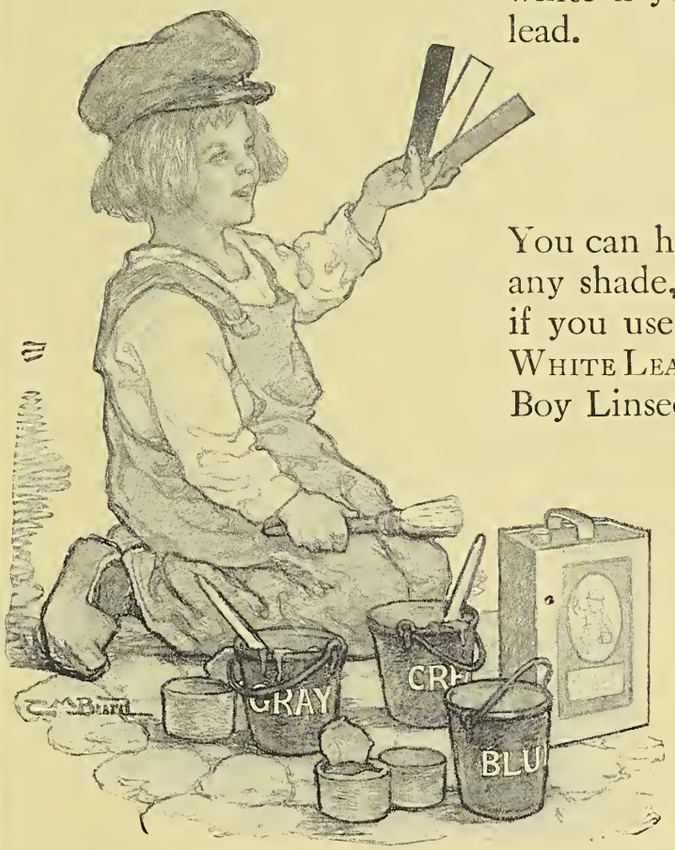
The Lure of the Orchid

(*Continued from page* 104)

orchids even in the tropics. It grew chiefly in inaccessible places, on the overhanging rocks and in the deep ravines of the coast. To gather the plants natives had to be lowered on ropes, but gathered they all were, and collectors no longer send home the *Laelia elegans!*

The orchid hobby, unlike other floral excitements, has never grown into a mania and has never known a period of inflation. The Tulip, the Dahlia, the Zinnia, the Camellia, each in its turn sprang into prominence, gave rise to wild speculation, had its day, and sank into oblivion. In quite another way the orchid has slowly and steadily made its way. Its cultivation, at first only possible to the immensely rich, is rapidly approaching the reach of all. Thanks to vast importations and improved facilities for domestic propagation, the number of plants in cultivation has so increased that prices of many of the most beautiful forms, which formerly were given in guineas, are now quoted in shillings. This has led to no decreased interest on the part of the more wealthy, who on the contrary, have continued to improve the standard of their collections. As ordinary specimens have become cheaper, prices for particularly fine or rare plants have continued to mount from year to year, until now it is no uncommon occurrence for some desirable plant to fetch at auction over a thousand dollars.

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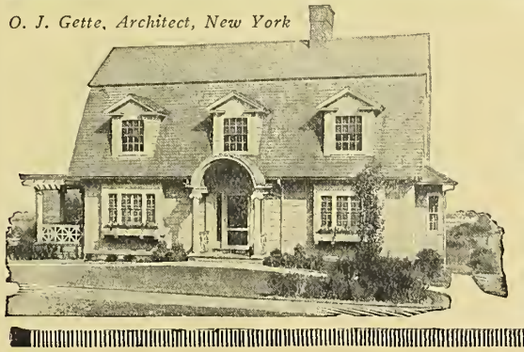
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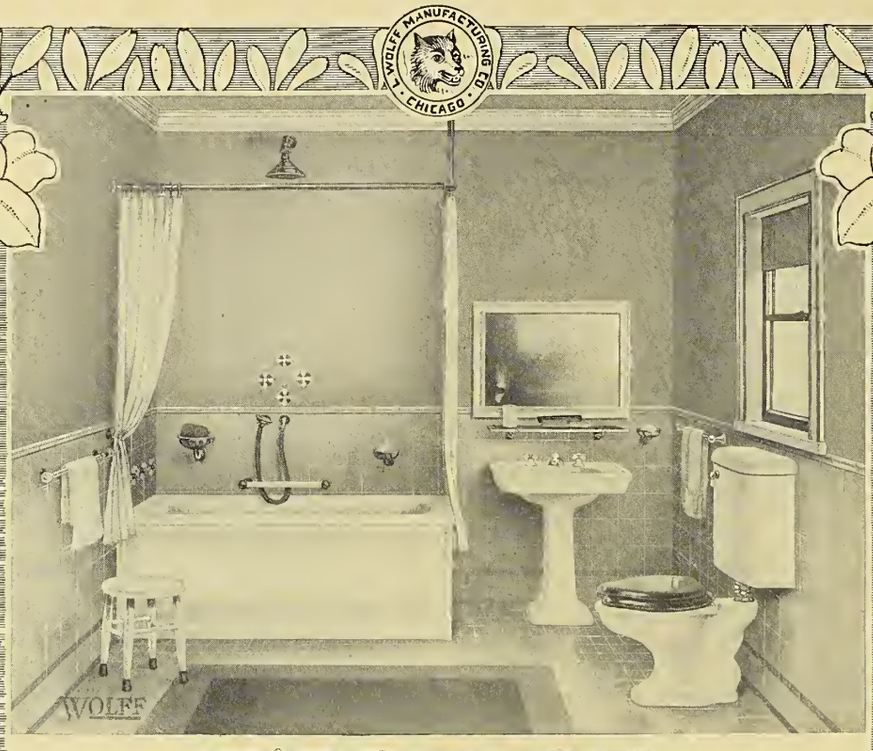
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The adventures of orchid collectors are fully as interesting as those of hunters, explorers and gold prospectors. Much has been written of the Klondike, but few have heard of the ecstasy of the traveler Roezl, on beholding a remote and mud-built chapel draped with garlands of Flor de Majo, the chancel walls clothed in a scarlet and crimson blaze of *Masdevallia Harryana.* A price of $5,000 was once refused by Sir Trevor Lawrence for one of the last specimens of the lost Lady's Slipper *Cypripedium faerianum,* which was later rediscovered in quantities and by accident by Mr. G. C. Searight of the Indian service while surveying in the Bhotan hills. Struck by its appearance, he sent a few specimens to a friend in Calcutta—word of its rediscovery was flashed over the world and shipments were rushed to London, where the florists had offered a reward of $5,000 for its reintroduction.

The story of another Lady's Slipper, the *Cypripedium Curtisii,* is less widely known but fully as interesting.

A single plant of this species was sent to England from Penang by Mr. Curtis in 1882. It ranked among the finest, and amateurs watched with impatience the coming of a further supply. No more came, however, and collectors gave up all hope of ever again finding it. Finally the explorer Ericsson, while collecting other species in Sumatra, took shelter from a storm in a mountain hut. There on the walls amid the scrawled names of other travelers who had rested there, was a drawing of the lost *Curtisii,* and underneath was written "C. C's contribution to the adornment of the house." Ericsson at once commenced searching the neighborhood, and at last, when he was just about to give up in disgust, found the plant in a most unlikely place.

Interesting, too, is the history of the *Cattleya labiata.* As far back as 1818, when orchid culture was in its very infancy, the plant was received by Dr. Lindley as a packing around some lichens sent from Brazil. Dr. Lindley described it and named it after Mr. Cattley, one of the earliest of orchid enthusiasts. From time to time other plants were received which were taken for the true *labiata,* until, with the increased knowledge of the flower, came the disclosure that the true type was no longer in cultivation and that its home had been forgotten. For years it was the one ambition of collectors to find this treasure again. At length, in 1889, some plants were sent by chance to a dealer in Paris. At once collectors were sent after it, and before long it was one of the most plentifully represented plants on the shelves of the growers. Since its rediscovery, rather unpleasant to relate, gathering has gone on so ruthlessly that the plant has been nearly exterminated, and the last collector scarcely found enough specimens to pay his expenses. Perhaps, however, there is still some wild where the *labiata* is blooming in large quantities, waiting for the discoverer to add to the romance of orchid hunting.

Beautifying the Small Back Yard

(*Continued from page* 101)

ering dogwood.

Ornamental Trees—

1 *Cornus Florida* (Flowering Dogwood)
1 *Pyrus Ionensis flore-plena* (Beachtel's crab apple)

Pot and Tub Plants—

4 *Hydrangea Hortensis Otaksa* (Otaksa hydrangea)
4 *Buxus sempervirens* (Standard tree box)
4 *Buxus sempervirens* (Pyramidal tree box)

Shrubs—

4 *Buxus sempervirens* (Globe-shaped tree box)
5 *Berberis Japonica* (Japanese barberry)
5 *Berberis aquifolium* (Mahonia)
5 *Deutzia parviflora* (Small-flowered deutzia)
10 *Deutzia Lemoinei* (Lemoine's deutzia)
5 *Spiræa arguta* (Sharp-toothed spirea)
5 *Spiræa Van Houttei* (Van Houtte's spirea)
10 *Rosa rugosa* (Ramanas rose)
15 *Rosa rugosa alba* (White Ramanas rose)
5 *Pæonia moutan* (Tree peony)
5 *Rhodotypos kerrioides* (Rhodotypus)
5 *Philadelphus lemoinei* Mt. Blanc (Mock orange "Mt. Blanc")
5 *Syringa vulgaris Varieties* (Named Lilacs in Variety):
1 *Alba grandiflora*
1 Madame Lemoine
1 Marie Legraye
1 President Carnot
1 Souvenir De Ludwig Spaeth
10 *Ilex crenata* (Japanese holly)
5 *Forsythia suspensa fortunei* (Fortune's golden bell)
20 *Taxus cuspidata nana* (Dwarf Japanese yew)
5 *Hydrangea paniculata* (Panicled hydrangea)
5 *Viburnum cassinoides* (White rod)
100 *Ligustrum amurense* (Amoor River privet)

Shrubby Vines

50 *Hedera helix* (English ivy)
11 *Ampelopsis tricuspidata* (Boston ivy)
5 *Lonicera Japonica Halliana* (Hall's Japanese honeysuckle)
2 *Wistaria Chinensis* (Chinese wistaria)
2 *Akebia quinata* (Akebia)
4 *Rosa* Dawson Rambler (Rose "Dawson's Rambler")
10 *Clematis paniculata* (Panicled clematis)
1 *Clematis lanuginosa* Lady Caroline Neville (Clematis "Lady Caroline Neville")
1 *Clematis lanuginosa* Henry I (Henry's clematis)

No-Rim-Cut Tires 10% Oversize

The Tale They Told

Here is a tale told by Goodyear tires to 250,000 users. Told nearly two million times.

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With old-type tires, rim-cutting ruins about 23 per cent.

No-Rim-Cut tires—our patent type—are 10 per cent. over the rated size. And that, on the average, adds 25 per cent. to the tire mileage.

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It is so thick that the blocks are cut very deep. So tough that the blocks are immensely enduring.

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And these projections aren't separate. They meet at the base so the strains are distributed the same as with smooth-tread tires.

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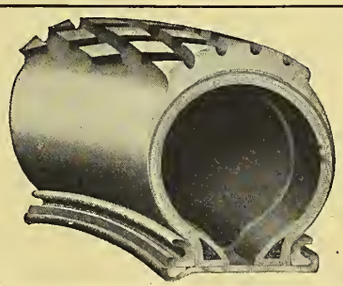
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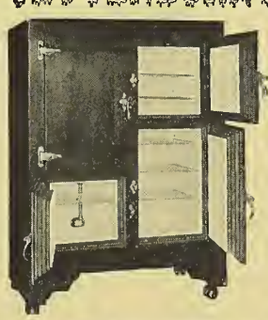
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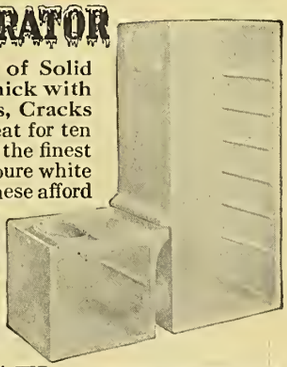
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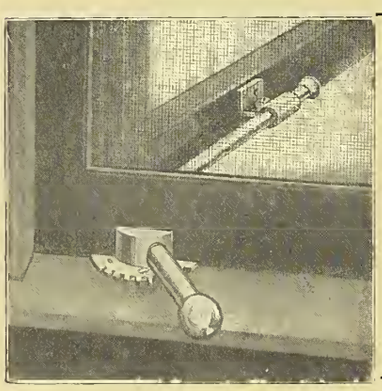
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Herbaceous Perennials—
30 *Alyssum saxatile* (Golden tuft)
30 *Phlox subulata* (Moss pink)
50 *Iberis sempervirens* (Evergreen candytuft)
10 *Yucca filamentosa* (Adam's needle)
10 *Althæa rosea* (Hollyhock)
10 *Achillea tomentosa* (Achillea)
10 *Phlox divaricata* (Wild Sweet William)
15 *Dictamnus albus* (Gas plant)
15 *Heuchera sanguinea* (Coral bells)
15 *Anemone Japonica* (Japanese anemone)
10 *Trillium Grandiflorum* (Wake-robin)
10 *Hemerocallis flava* (Lemon lily)
5 *Clematis recta* (Upright clematis)

Ferns—
10 *Adiantum pedatum* (Maidenhair fern)
10 *Dryopteris marginalis* (Wood fern)
15 *Polystichum acrostichoides* (Christmas fern)

Bulbous plants
150 *Colchicum speciosum* (Meadow Saffron)
100 *Eranthis hyemalis* (Winter aconite)
15 *Fritillaria meleagris* (Fritillaria)
50 *Galanthus elwesi* (Giant snowdrop)
100 *Lilium speciosum rubrum* (Red lily)
60 *Narcissus poeticus* (Poet's narcissus)
20 *Narcissus princeps* (Daffodil "Princeps")
20 *Narcissus* Golden Spur (Daffodil "Golden Spur")



The Hundred Per Cent. Garden

(*Continued from page* 117)

you can give them. If you haven't a convenient place near a window, get a couple of ordinary metal brackets, screw them securely on either side of the window and place a light board across on which to put the flat. This makes an ideal place for the little seedlings. The glass covering should be removed when the sun shines directly upon the box, as it forms a miniature coldframe in which the temperature would be too high.

From the time the flat is put in the window until the third true-leaf appears (when they will be ready to transplant) is the most risky stage of seedling growth. The dreaded enemy is the "damping off" fungus, which attacks the stems where they enter the soil, causing them to turn black and shrivel up or rot off. There are four precautions to take against it the first of which is to plant early enough to start over again if it should get the best of you. The others are: *Proper care in*

watering. If the flat has been thoroughly soaked through from below at the time of planting, it should need no further watering until after the seeds have sprouted. When further watering is needed, as indicated by the surface of the soil becoming dry, the best way is to repeat the former process. If this cannot conveniently be done, water with a can, using the finest nozzle, and being careful to do it on a bright, sunny day when all the foliage and soil surface will have a chance to dry off before night. In either case saturate the soil thoroughly. The temperature of the water, contrary to some theories, makes little difference.

Maintain a proper temperature. In the case of the early plants (sown in the first flat) this will be forty-five to fifty degrees at night (never going below forty degrees, if it can be helped). The day temperature should be ten to fifteen degrees higher.

Give ample ventilation. Remember that your little plants need airing every day. Make it your rule to give all the ventilation you possibly can without letting the temperature stay below forty-five degrees at night or sixty degrees in the daytime. The best way is to open a window in an adjoining room or on the opposite side of the one they are in, as a draft directly upon them may cause trouble.

Given the above ample but regular treatment, the little seedling should grow rapidly and acquire a healthy dark green color. When they touch the glass it should be removed altogether; and if they show any tendency to bend toward the light, occasionally turn the flat about to let them straighten up again.

In six to eight weeks after sowing they should have developed into quite sturdy little seedlings, and about the time the third true leaf may be just seen, they will be ready for "pricking off," or transplanting. Do not delay this operation a day after they are ready for it, especially if they have come up thick, as they will run the double risk of becoming lanky and of damping off.

Prepare flats similar to the seed flats, but three or four inches deep, instead of two. Into the bottom put a layer of very old, thoroughly rotted manure, and fill level full of good soil—that used for planting will be all right, but it will not matter if it is not so light or finely sifted. If no manure is to be had, put a layer of drainage material on the bottom of the box, and mix bone flour, at the rate of three to four quarts to the bushel, through the soil, preparing it, if possible, a week or so in advance.

Taking up the seedlings must be done with care, as the filmy little rootlets are easily broken. The seed box should be watered the day previous to have the soil in just the right condition. Then take up a small bunch of plants and dirt and gently pull the seedlings out, discarding all that are weak or show any sign of stem rot, and lay the rest out on a small piece of shingle or something similar, so that

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they are ready to your hand. Then, taking a plant in the right hand, make a hole with the left forefinger, into which lower the roots and about half the stem. Do not crowd them but press the earth firmly down and against each plant, using the thumbs and forefingers so that it may be made to stand up straight and cannot readily be pulled out. Fifty to a hundred plants may be put in an ordinary flat, but the former number gives more room and consequently better plants for the garden.

After transplanting, water, if possible, by sub-irrigation, as before. For the next few days shade the flats with newspapers from direct midday sunshine, after which they should have all the light possible. Give the same care in the way of watering, ventilation and temperature as they received before.

To put the plants outdoors provide an ordinary coldframe, with glass sash. They may be put into the coldframe directly after transplanting, but it is better, if possible, to keep in the house, or in a mild hotbed, for a few days, to give them a quick start. The treatment of the plants in the frame continues about the same as that already given, except that more water and more air are needed as they get stronger, and the days warmer.

The early plants, sown from February first to March first, will be ready to go outside about March fifteenth to April fifteenth. When these are removed to the garden, it will leave room for the tender vegetables, which are handled in the same way, except that, for the best results, they will require two transplantings, the second, if possible, into pots. They should also be given a lighter soil (more rotted manure or leaf mold in it) than that in which the early plants will thrive. They should also, of course, be given a higher temperature—fifty-five degrees to sixty degrees at night, if possible. Do not set them out in the frames until there is no danger of their being frosted by a sudden cold snap.

Hardening off the plants is of the greatest importance to prevent a setback after transplanting to the garden. This is accomplished by giving more and more ventilation and finally leaving the sash off at night as well as in the daytime.

All of the early things will stand a light freeze, if they receive proper treatment the following morning. This is to keep them shaded from the sun, and drench them with ice-cold water, so they will thaw out gradually.

Poor seed (not absolutely bad seed, mind) may easily make a difference of from twenty to eight per cent. in your garden crops. So you can readily see that, if you have spent time and money on supplying every other factor for a hundred per cent. garden, poor seed will be a pretty expensive luxury. The best seed is the cheapest, no matter what it costs. You have, for the most part, got to trust to the personal honesty of your seedsman. Therefore, use care in selecting him. The best seed houses test every lot of seeds



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they have to dispose of. Even so, the planter may test the seed houses, to try several before he settles on any one as the best.

Vitality, strong germinating power, is a prime requisite in good seed, and the slight trouble required to test the seeds for yourself will be well repaid. It is better to start them in soil, in a moderate temperature, than in wet cotton or a blotter.

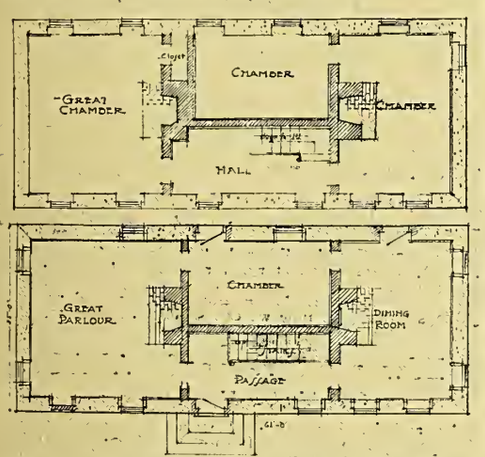
Good breeding, however, is just as important as vitality. We must know not only that the seeds will grow, but what they will grow into. A hint to beginners that I know will prove of practical value, is to go over several catalogues carefully, and as far as possible order each of the sorts you want from the house that introduced it. Then you will be pretty sure to get both vitality and good breeding in the things you want. Stick mainly to standard, well tried out sorts, however. The much praised novelties often prove very disappointing, as most seedsmen mention only their good points, leaving the customer to discover the bad ones. A list of tried and true sorts will be found in this month's Garden Department.



Old Philadelphia Houses

(*Continued from page* 115)

all of them of ample proportions. As there is a gambrel roof the third floor rooms have more space in them than the usual third floor rooms under a pitch roof.



Upper cut, second floor; lower, first floor
Plans by Joseph P. Sims

Heavy white oak was used for stairs and banisters and all the interior woodwork is remarkably beautiful and wrought in a simple and vigorous pattern.

HAROLD DONALDSON EBERLEIN

Serviceable Garages of Good Design

(*Continued from page* 114)

lathe and drill press and to supply current to the electric rectifier for charging electric vehicles. Gas has been used where electricity was not available for lighting



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No matter where a ship may be along the American coast; no matter how dark, or cold, or stormy the night, the coast guard is on watch, patrolling the nearest beach or rocky cliffs.

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purposes by putting the gas fixtures back of a glass pane in a recessed opening in the wall, vented outside. It is not very satisfactory, however, and must be located very high.

Ordinarily it is quite safe to enter a garage smoking a cigar, and a great many men even smoke while they work on cars. Very few automobiles have leaky tanks, but there may always be dangerous conditions resulting from carelessness and apt to cause fatalities. To guard against them it is best to make the garage and everything about it as safe and fool-proof as possible.

Turntables are used in some cases where it is necessary to turn a car in a limited space or where there is no room outside, but the space under the turntable must be drained because the oil and gas accumulating there are dangerous.

A repair pit, over which the car may be run in order to work under it, is very practical. It should have an outlet at the rear so that in case of fire the mechanic will have a safe means of exit to the outside. It is much easier to work under a car or to inspect it from such a pit than when lying on your back. I have had some experience both ways and prefer the repair pit.

Three ring bolts should be placed in the ceiling so that if it is necessary to change bodies or raise the engine these may be used for fastening the tackle.

Oil should be kept in galvanized iron drums made for that purpose, as it seeps through oaken barrels and soils the floor beneath them. Oil is ruinous to rubber and catches dirt. Drip pans filled with sand should be kept under each car.

Swinging, sliding and folding doors can be used in the garage. The sliding ones are usually preferred because they take up less room. Swinging doors, if they swing in, sometimes interfere with the cars, and are rather unsightly when open if they swing outward. Where several cars are to be kept it is best to use the sliding door.

The average automobile has a width over the mud guards in the widest part of five feet six inches, and with the top down is sixteen or seventeen feet long. A large limousine with a double tire case on top is eight feet six inches high. Therefore doors should be at least eight feet seven inches or nine inches high. The height of the automobile top varies considerably, and the length of the car is likely to increase somewhat in the future, so that in designing a garage the changes likely to occur in the future cars should be considered. The space a large automobile requires to turn a circle in is from forty to fifty feet, but the car can be turned in a very small space by backing.

The care of the automobile is an exceedingly important matter. The owner cannot obtain the best results from a car unless it is properly looked to. The running gear must be kept free from mud in order to keep grit out of the bearings. Varnished surfaces must be kept clean and



The Beauty of Snow-Laden Evergreens

These wintry days, when other vegetation has cast aside its graceful draperies, the Conifers, in their uniforms of beautiful green, stand vigilant, watchful, guarding for us pleasant memories of summers past, the pledge of bright days to come again. Evergreens, beautiful at all times, seem loveliest in the winter sunlight, covered with a mantle of snow, radiant with icy crystals.

If you would enjoy the beauty of Evergreens, now is the time to inspect your grounds and order for spring planting. Surely you will find room for a few Evergreens or other ornamental trees or plants. In making your selection, remember that our 800 acres in nurseries enable us to meet your requirements to the fullest extent. 59 years of specializing on all that pertains to Horticulture accounts for our pre-eminence in this field. Our Landscape Department is well equipped for efficient service to customers. Water-color sketches, planting plans and full estimates furnished. Correspondence or personal interviews solicited. Don't put this matter off until the rush of spring is upon us.

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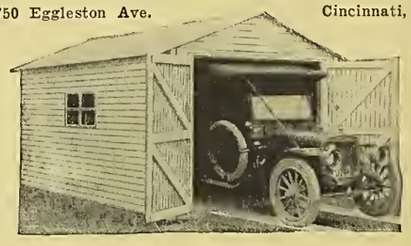
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free from oil and dust by frequent washings and polishings. An even temperature of from fifty-five to sixty degrees should be maintained in garages during the winter, and the water used for washing cars should be lukewarm. Sudden changes from a high temperature to a low one and the sudden application of very cold water causes the varnish to crack or check. There is not a great deal of work to be done on a car if it is done regularly. If it is not done regularly the car soon becomes out of order. It is convenient for either the owner or chauffeur properly to care for his car in a well-equipped private garage. In a public one there is less opportunity to look after private property and therefore the work is left to others, who do it in an indifferent way and usually charge a high price for storage and service.

Quarters for the chauffeur can be provided for on the second floor of the average garage, and should consist of a general living-room, bathroom and two chambers. In garages where several cars are kept it is advisable to have a small machine shop so that the chauffeur, who is usually a good mechanic, can make the majority of repairs promptly.

The arrangement of electric lights requires some attention. In a number of garages I have placed a series of lights eighteen inches from the floor, so that a strong light could be cast under the car and on the running gear. The heating pipes are usually arranged in a series of coils around the walls to a height of about three feet, giving the maximum amount of radiation.

A machine for welding and vulcanizing should be provided in the garage, and cupboards should be built in for the storage of tires and various implements and clothing. There should also be moth-proof chests for robes.

After the garage has been constructed on the model lines mentioned above a well-drained driveway eight feet in width and built of macadam should lead up to it. The result of both will be distinctly grateful to all thoughtful owners of the automobile.



Training the Dog—VI.

(*Continued from page* 86)

from you, and back him into the corner, at the same time raising his front feet well off the floor. In a moment you will see the first advantage of the right angle formed by the room walls. As you press your pupil backward he will naturally attempt to keep on his hind feet, probably stepping back in the effort to preserve his balance; but the wall soon effectually checks further retreat and makes it possible for you to raise the dog's body into the desired vertical position by continuing the backward and upward pressure.

The dog is now standing on his hind



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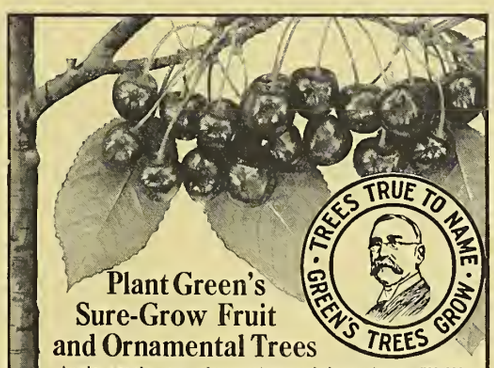
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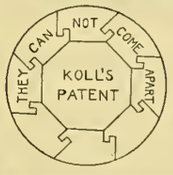
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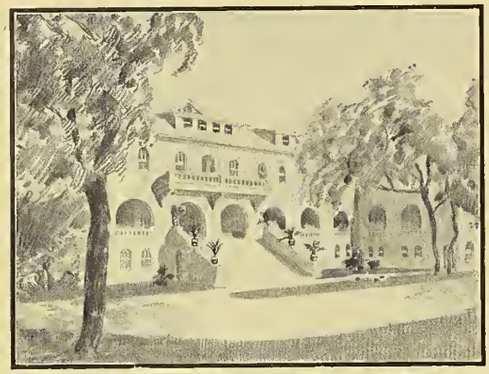




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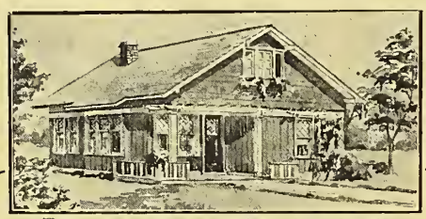
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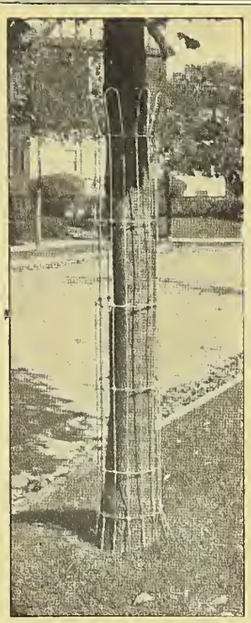


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legs literally "with his back to the wall," probably trying to step still further away from you, but making no headway in the attempt. Hold him thus a moment, and if he does not settle down into a crouching posture *with his hind legs under him in a natural position,* shift both his front legs to one hand and with the other draw the recalcitrant hind feet into the required position. It is essential that you insist on this matter of the proper placing of the legs; little or no success will be attained in teaching a dog to sit up unless he feels that his hind feet are in such a position that they will support his body in a state of balance. While placing the feet as described, exert a gradual downward pressure with the upper hand—you will see at once how to bring about the desired result—and having thus brought the dog into a more or less close approximation of the correct "sit up" position, keep repeating the appropriate order while you hold him there.

Perhaps at about this stage of the proceedings your pupil will be seized with a sudden weakness of the spine, and "cave in" most dejectedly. In this event the second advantage of the corner position becomes apparent: it is manifestly impossible for the dog to "cave" in more than one direction (forward), and this tendency you can readily check.

The proper position for the front feet of a dog that is "begging" is forward and up at an angle of perhaps forty-five degrees. As soon as the pupil reaches that stage of the trick in which he readily "squats" straight-backed in the corner, with hind legs solidly under him, gradually release your hold on his fore shoulders and raise his front paws to the position mentioned, keeping one hand under them to be sure they are not lowered.

When your judgment tells you that the dog has a pretty clear idea of what "sit up" means, try and induce him to do it without your helping him up. Do this in the corner, for he has learned the supporting value of the two walls and they give him confidence. Very often you will find it helpful at this point to *motion* him up with the hand, holding it above him and snapping your fingers to attract his attention upward while you give the command. It is well, too, to stand up yourself now, of course bending over enough so as to be close to the dog and yet above him.

It is impossible to set any fixed period at the end of which you can dispense with the corner of the room and perfect the trick without the aid of artificial support. Some dogs will catch the idea of the lesson in two or three trials, while others may need a week. The only sure guide in the matter is to study the particular case in hand and follow your own judgment. When the step is finally taken, do not expect too much of the dog at first. Steady him with both hands when he has his first experience in sitting up without the wall support, for in nine cases out of ten he will have difficulty in keeping his balance unaided.

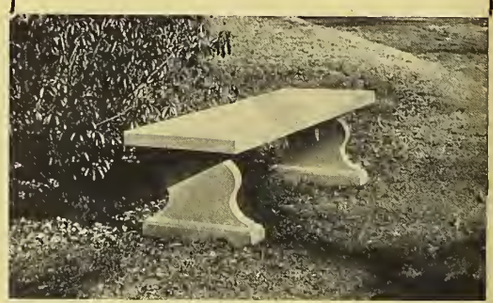


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Do not prolong these lessons unduly. Remember that sitting up is an unnatural posture for any dog, and is tiring especially to a half-grown puppy. Let your pupil rest frequently, and the mutual results will be better.

And now just a few words in regard to rewards for proficiency in performing tricks. About 499 people out of 500 seem to think that a lump of sugar or some such stuff is absolutely necessary to induce Terry or Waldemar to go through his paces. It's *not*. A trick, no matter how absurd it may be, should be considered by the dog as just as much a matter of obedience pure and simple as anything else you tell him to do. In *some* cases (I hesitate to say this for fear the excuse may be too often used) a tidbit may be offered to cure a bad case of the sulks, but for a general working rule limit your reward to a pat and a few words of praise. Thus will your dog be dependable when required to "show off" and you will not have to keep on hand a box of fancy crackers or a pound of chocolate creams for his especial benefit. R. S. L.



Our Winter in the Happy Valley

(*Continued from page* 94)

between the sleigh and the horse."

"Is that what *you* would have done?" This was from the head of the table.

"I'm through, lets get busy!" exclaimed the irrepressible Madge. "What can we do to-day?"

"Can't you think of anything?"

"Think of too much. I want to snow-shoe, to ski—is there any such word?—to coast, climb the mountain, visit Buttermilk Falls, go through the gorge where I hear the water roaring this minute—"

"Better begin with the gorge. It is the nearest, and the shortest trip you can make."

"But it is more than half a mile through."

"But you can't go through. Giants forty feet tall guard that gorge. Harry can creep a few feet under the rocks with his camera and get a view of the mouth of the cavern from within."

"That will only take half an hour. We will go to Buttermilk Falls afterward."

But no one ever broke the spell of that gorge in winter in less than half a day and dinner was ready for the young folks when they returned to the cabin. Madge spent the short afternoon on snow-shoes, while Harry and Jack took turns in being bucked off the skis as they dragged a flexible flyer to which Marian clung, down a steep hill through the drifted snow. It was after supper when Marian, who was sitting beside me, demurely asked:

"What is it to be keelhauled, Uncle Archie?"

"It is having a line that passes beneath the keel tied to you and being hauled by

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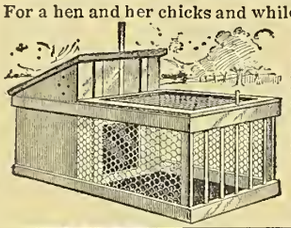
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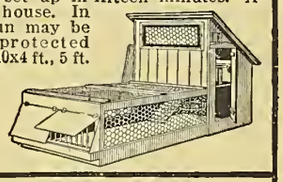
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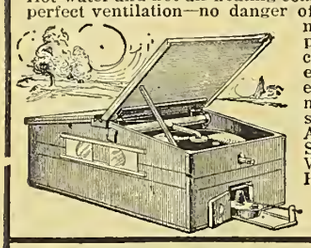


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it through the water from one side of the ship to the other."

"That's what I thought, and that's what has been happening to me. I've been dragged like lightning through drifts a mile long where I couldn't breathe for an hour."

"Why didn't you tell the boys to stop?"

"I didn't want them to. I want something to tell the girls at school that will make them die of envy."

"We are going to Buttermilk Falls in the morning," said Madge to her hostess as she stood sleepily before her, holding a candle at an angle of forty-five degrees. "What time must we get up?"

"You ought to start two hours before sunrise."

"Wow, but that will be cold and dark!"

"It will be eight by the clock, but down in the Happy Valley in midwinter the Sunday is between ten and two."

"I was afraid you didn't have any Sunday here," interposed Marian.

"Just you wait till it comes," said I, "and watsh your Aunt Lucy waltb you off six miles to a Sunday School that she runs for just such little heathen as you."

It was a gay party that started from the cabin before the clock struck eight in the morning and it was a tired party that five hours later, having wallowed five miles in the snow, begged to have its dinner served raw rather than have it delayed.

"Did you see any game?" I asked.

"Millions of them," exclaimed Marian. "There was a bunch of wild hens, I guess they were, that made an awful noise when they flew and Jack held a stick in both hands and pointed it at them and said 'Click!' What do boys do that for? I've seen them do it to a cat. Then there were tracks of everything in the snow. There were the cunningest little mouse's tracks close to a tree and a big bear's track going right up the mountain. Jack said it was the track of a rabbit, or a fox, or some kind of a cat—he didn't mention the name. I think it was a bear, don't you?"

"Were the tracks near the big, flat rock this side of the falls?"

"Pretty near."

"Then I know all about it. Do you remember what happened to the children who mocked Elisha?"

"Forty-two bears tare them. Maybe it was forty-two children that the bears tared."

"Well, whichever it was, the descendants of those bears have settled near that big rock and they may have overheard some of your disrespectful remarks to me."

"We did see bear caves on the side of the mountains," said Madge, "and all kinds of gruesome monsters among the rocks, for the snow on the mountainside was full of deep shadows that formed strange profiles and made masks like distorted faces. I had to recite something about winter once, and I remember that:

'Nature was frozen dead—and still and slow,
A winding sheet fell o'er her body fair,'

but there isn't any winding sheet about

this. There was life and sound and motion every minute. There was the roar of a small avalanche, the cracking of a great tree from the frost—that's what Harry said it was—a bunch of the dearest and noisiest little birds, and the way the sparkling water poured out of the dark cavern and tumbled over Buttermilk Falls was worth the whole price of admission. Harry is sure he got a beautiful picture of it."

"He said 'a bully picture'" explained the matter-of-fact Marian.

"I am going to get a better one tonight. I am going to take those falls by the light of the moon at midnight," said Harry.

"You are laying out a pretty lonesome walk for yourself," I remarked.

"Who says it will be lonesome with me with him?" interjected Marian.

"Will anyone else help make the walk pleasant for Mr. Forsyth?" I inquired.

"Oh, Jack and Madge will tag along, but that won't make it any pleasanter for him."

The plan was carried out, though it took diplomacy to prevent the lady of the house from "putting the kibosh" as Marian expressed it, on the whole escapade. After Buttermilk Falls other moonlight views were taken, and during a ten minute exposure on one ravine Jack walked up the gorge swinging his lantern, which supplied one of the curiosities of the outing, for while the moving youth left no impression on the sensitive plate, the flame of the swinging lantern left a sinuous, fiery trail.

Ten days passed quickly to the jolly four. They tramped over all the half-broken roads, waded through the untouched snow of the deeper forests, explored the caves among the piled up rocks and followed the courses of mountain brooks through many a deep ravine. They fraternized with the children of the distant district school and accepted invitations to ride home with the merry youngsters on their ox-drawn sled. Once they chartered a boy with his slow-going team to take them on a straw ride over the hills, and were happier in their primitive outing than they had been on many an automobile trip. Marian became an adept on snowshoes while Madge developed skill on skis. Jack became infatuated with the study of the creatures of the wild and pored over my books on the subject by night and followed the trail of strange beasts by day. One sees what he looks for in the mountains and the boy's list of the wild animals he met was the amazement of even country-bred youths. He even impressed our wise cat, Bunny, who opened latched doors like a human being, for one morning she laid at his feet a flying squirrel, reasoning doubtless that even so sharp-sighted a youth might have overlooked this creature of the night. Jack's crowning adventure came when the broad trail of a bear, passing within a stone's throw of the cabin, was discovered one morning. The boy joined a hunter, who with rifle and dog

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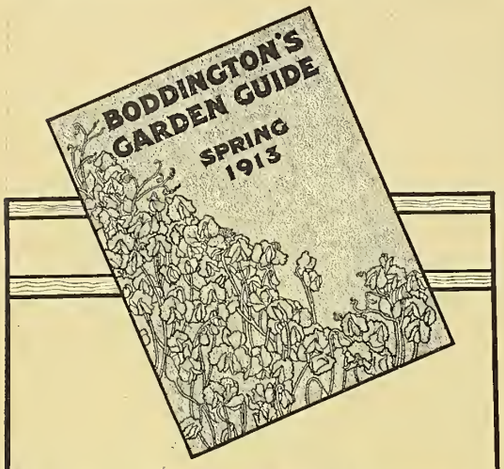


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was following the beast, and it was after dark when we saw him again. But for the anxiety it would have caused us he would have camped in the woods with the hunter to have resumed the trail the next day.

Harry wandered with his camera in a country that Jack had found filled with living creatures, seeing none of them; but every distant mountain top or nearby rocky cliff, every tall, snow-burdened hemlock and low-growing mass of laurel drew his eyes like magnets. With the mercury at zero he made Jack stand for the human interest while he pictured dark shadows that lay across the path. He followed the snake-like course of the stream, sluggishly cutting its way through the drifts in the valley, and he pictured Bear Hole Brook bursting the bonds that the winter king had forged.

One day, there fell upon the cabin a shadow in the shape of a letter that Madge handed to the lady of the house with tears in her eyes. The letter began:

"We are happy to hear of the 'lovely time' you have had, but your school vacation is near its end and you must not fail to be home on time. Tell—" but the rest was too intimate to record here.

It was later in the winter as we sat by the blazing logs, opening our mail in the peace of our cabin home, when the lady handed me a letter, saying:

"How shall I answer that?"

I read, "What keeps you from dying of loneliness, shut in by the deadly dullness of your frozen country?"

"Tell her, if you like," said I, "that the days need to be forty-eight hours long properly to hold our happiness."

There came a glance from smiling eyes and the lady nodded as she studied the faces in the glowing coals.

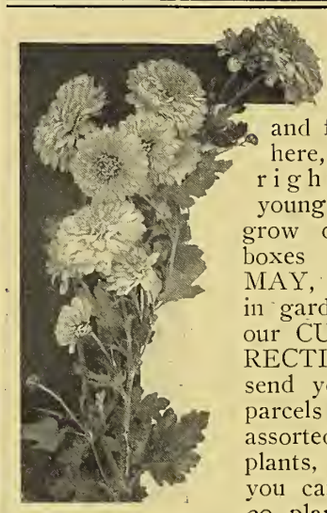


The Collector's Corner

Medallion China

THE rarest, most expensive and highest class specimens of what collectors call "Old Blue" are those pieces which are decorated with medallions. They seldom come to auction sales, for they are eagerly bought by collectors and dealers at private sale. A ten-inch plate at the Burritt sale in 1903 with the four portraits on it brought $130, and they have doubled in value since then.

The choicest are those with four portraits like the platter which has a central view of Windsor Castle, Rochester Aqueduct at the base, and Jefferson, Washington, Lafayette, and Clinton at the top, making one of the oddest jumbles possible. Like all this blue crockery which has an acorn border and which was made by Ralph Stevenson, or Ralph Stevenson and Williams, the print is clear and the



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color fine. The English view was used because it fitted the space. The bulk of this blue ware was made between 1820-40, and that marked R. S. W. was prior to 1834, when the mark was Ralph Stevenson and Sons. Only three of these platters have come within my knowledge, and I should hesitate to place a value on them, since the phenomenal prices brought at the Deforest sale in 1912 exceeded all previous records.



This pattern is among the choicest examples of "Old Blue"

On the plate shown with the four medallions the arrangement of heads is different, Jefferson comes first, then "Welcome Lafayette, the Nation's Guest," followed by "President Washington," and "Governor Clinton." The view in the center is "Niagara," at least it is so denominated on the back, where in addition to the impressed name, Stevenson, is an urn with the name Niagara on it in blue. While this view is found on both nine and ten inch plates without the medallions, when the medallions are present the plates are ten inch. The position of the medallions varies on different specimens, some almost entirely obscuring the house and falls.



The position of the medallions varies on different specimens

The view at the base is the "Entrance of the Erie Canal into the Hudson at Albany," not nearly so often used as the Rochester view. The value of this plate is limited only by the eagerness of the



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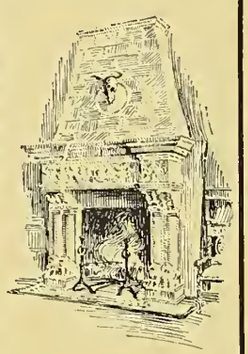
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collector to possess it, and the length of his purse.

To many collectors the little six-inch plate showing St. Paul's Chapel, New York, with the Clinton medallion, and Rochester Aqueduct at base is one of the most interesting of all the medallion pieces. This also has the acorn border which is so attractive, and which is found on a series of beautiful English views as well as these American ones.

In this view St. Paul's looks very different from what it does to-day, surrounded by skyscrapers, for when it was built it was quite out of town, and placed with its back to Broadway, in anticipation of the town growing between it and the river, according to some authorities, or because the chancel was to be placed on its eastern side according to the ritual. This chapel is one of the few pre-Revolutionary relics left in New York.



One of the most interesting of all the medallion pieces

At the time of its manufacture this medallion crockery—for it is not china—composed dinner sets, for three sizes of plates, and platters and pitchers are known to bear the medallions. So far the forger has left it alone. It is an odd fact that very few pieces of this old blue ware of any description are known in England, and the details about many of the potters are meager and vague.

N. HUDSON MOORE



The Dying Hickory Tree

WITHIN the past ten years a large percentage of the hickory trees have died in various sections throughout the northern tier of States from Wisconsin to Vermont and southward through the Atlantic States to central Georgia and to a greater or less extent within the entire range of natural growth of the various species. While there are several and sometimes complicated causes of the death of the trees, investigations by experts of the Bureau of Entomology, U. S. Depart-

ment of Agriculture, have revealed the fact that the hickory bark beetle is by far the most destructive insect enemy and is therefore, in the majority of cases, the primary cause of the dying of the trees.

The first evidence of the presence and work of the beetle is the premature dying or falling of a few of the leaves in July and August, caused by the adult or parent beetles feeding on the bark at the base of the leaf stem, but this work alone does not kill the trees.

The next evidence of its destructive work is the dying of part of a tree or all of one or more trees. If the trees are dying from the attack of the beetle, an examination of the inner bark and surface of the wood on the main trunks will reveal curious centipede-like burrows in the bark and grooved on the wood itself. These are galleries and burrows of the parent beetles and of their broods of young grubs or larvæ. The girdling effect of these galleries is the real cause of the death of the trees.

The broods of the beetle pass the winter in the bark of the trees that die during the preceding summer and fall. During the warm days of March and April these overwintered broods complete their development to the adult winged forms, which during May and June emerge through small round holes in the bark and fly to the living trees. They then attack the twigs to feed on the base of the leaves and tender bark and concentrate in the bark of the trunks and large branches of some of the living healthy trees, boring through the bark to excavate their short vertical egg galleries. The eggs are deposited along the sides of these galleries and the larvæ hatching from them excavate the radiating food burrows which serve to girdle the tree or branch.

The following recommendations for the successful control of this beetle are based on investigations, experiments and demonstrations conducted by the experts on forest insects of the Bureau of Entomology during the past ten years.

1. The best time to conduct the control work is between October 1st and May 1st, but must be completed before the 1st to middle of May in order to destroy the broods of the beetle before they begin to emerge.

2. The hickory trees within an area of several square miles that died during the summer and fall and those of which part or all of the tops or large branches died should be located and marked with white paint or otherwise.

3. Fell the marked dead trees and cut out all dead branches or the tops of the remaining market trees which still have sufficient life to make a new growth of branches.

4. Dispose of all infested trunks and branches in such a manner as to kill the wintering broods of the beetles that are in the bark; (a) by utilizing the wood for commercial products and burning the refuse; or (b) by utilizing the wood of the trunks and branches for fuel; or (c) by

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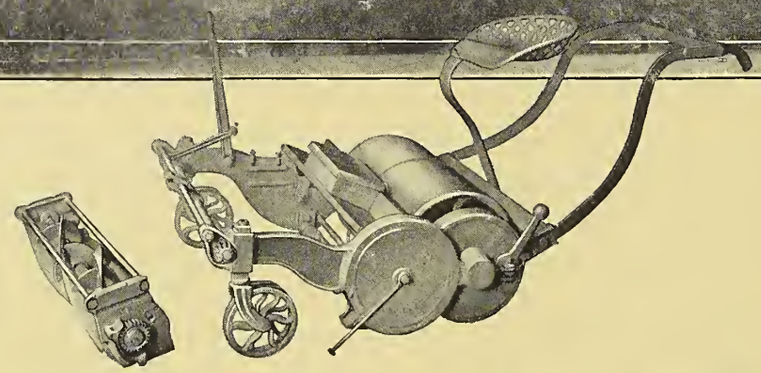
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Lawn Mowers

placing the logs in water and burning the branches and tops; or (d) by removing the infected bark from the trunks or logs and burning it with the branches or as fuel.

5. So far as combating the beetle is concerned it is unnecessary and a waste of time to dispose of trees or branches which have been dead twelve months or more, because the broods of the destructive beetle are not to be found in such trees.

6. Spraying the tops or branches or the application of any substance as a preventive is not to be recommended. Nothing will save a tree after the main trunk is attacked by large numbers of this beetle or after the bark and foliage begin to die.

7. The injuries to the twigs by this beetle do not require treatment.

8. The bark and wood of dying and dead trees are almost invariably infested with many kinds of bark and wood-boring insects which can do no harm to living trees. Therefore all efforts should be concentrated on the disposal of the broods of the hickory bark beetle, according to the above recommendations.

In order to insure the protection of the remaining living trees it is very important that at least a large majority of the dead infested and partially dead infested trees found within an entire community of several square miles, be disposed of within a single season to kill the broods of this beetle. Therefore there should be concerted action by all owners of hickory trees.

On account of the value of the hickory for shade and nuts and for many commercial wood products it is important that the people of a community, county or State who are in any manner interested in the protection of this class of trees, should give encouragement and support to any concerted or co-operative effort on the part of the owners towards the proper control of the hickory bark beetle.

Growing Mushrooms

VALUABLE suggestions on the growing of mushrooms are given by Prof. A. G. B. Bouquet, vegetable garden expert of the Oregon Agricultural College. Those afraid of "toadstool poisoning" need have no fear if they follow his directions.

"The kind usually grown commercially is the *Agaricus campestris*," says Prof. Bouquet. "The color of the gills (the under surface of the cap) is creamy white, turning later to a pink, and in some brown varieties to a grayish brown, and later still to white.

"The common causes for failure in mushroom growing are the use of poor spawn or spawn killed by improper storage; spawning at too high temperature; too much water at spawning or later; and improper preparation of the bed. One of



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(*A Director of the Illinois Audubon Society*)
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the first requisites is fresh, reliable spawn. This can be obtained from reliable seedsmen or from certain mushroom spawn dealers in different parts of the United States. The usual price is $2 for enough spawn for thirty square feet.

"Mushrooms may be grown in a shed, cave, cellar or any vacant space in a greenhouse, if the temperature and moisture conditions are favorable. The temperature should range from 53° to 60°, 55° to 58° being best. The place should not be very damp, though a moist atmosphere is desirable. Cold is less injurious than heat. That is why many mushroom houses are built half below the ground, so that there is less trouble in keeping down the temperature. Mushrooms are usually grown in early spring or summer, and in the fall and early winter, but in proper houses they may be produced the year around. The color of the product is much improved by darkness, but a little light may be allowed to harvest the mushrooms and work in the bed.

"The manure must be in the primary stage of fermentation, and should not contain more than a moderate amount of straw or such substitutes as sawdust or shavings. It should first be piled in a heap three or four feet high, and if dry should be watered slightly to start fermentation. In four or five days it should be turned, and again in seven or ten days to permit of even fermentation and prevent burning in spots. In fifteen days or three weeks the temperature will begin to fall and it will be ready for use.

"The beds are usually three and a half by four feet and ten or twelve inches deep, with boards outside to hold the manure. The compost should be just moist—a state when water can not readily be squeezed out. Layers of four to six inches should be put in and packed slightly. The temperature should be allowed to fall to 75° before the spawn is put in.

"Commercial spawn comes in bricks which are cut or broken into two-inch squares, ten or twelve pieces to the brick. These are put ten inches apart an inch under the surface of the manure. It is usually unnecessary to water the beds after spawning, which almost invariably damps off the young spawn. If in two weeks there are no white threads in the manure about the spawn a layer of loam not too heavy nor too light, about an inch and a half deep may be spread over the surface. It should be barely moist, to prevent the bed from drying out.

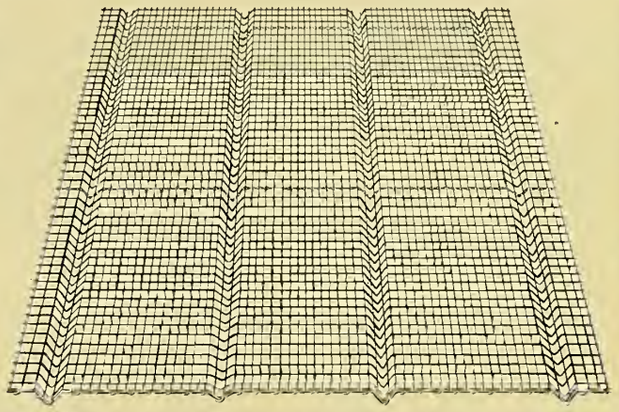
"When the mushrooms appear the bed may be sprinkled lightly once or twice a week, but never soaked. The walks and walls of the house may be watered to keep the atmosphere moist. The mushrooms usually appear some six weeks after spawning. In picking, the cap, or cap and stem, should be grasped and twisted to remove easily from the soil. All defective ones and the small 'buttons' should be removed. Shipment is made in small boxes similar to strawberry boxes or in

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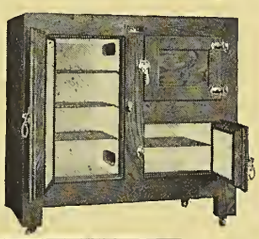
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cardboard boxes holding two to five pounds, often lined with paper to keep the mushrooms in good condition. The market price ordinarily averages thirty-five to fifty cents a pound, and sometimes goes up to seventy-five cents.

"The bed will produce successfully from six weeks to three months, many growers figuring the profitable yield to be half a pound to the square foot of surface. Many get two pounds to the square foot. When a bed is no longer profitable, the manure may be used for garden purposes, though useless for mushrooms since the heat is exhausted. The house should be thoroughly cleaned before another crop is raised.

"Those wishing printed matter on the subject may write to the Massachusetts Board of Agriculture for Bulletin 5, Farmers' Bulletin 204, 'Cultivation of Mushrooms.'"

A Cement Driveway

HERE is one owner's idea of an entrance driveway for automobiles. It is novel if not perfect. At least there is no macadam to be kept in shape, no dust for lack of sprinkling and no weeds to be kept out of the drive. Water will rush off without effecting the surface and tires will produce no ill effects.



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How to Kill Quack Grass

THE Department of Agriculture has issued Farmers' Bulletin No. 464, on "The Eradication of Quack Grass." Quack grass is well known to most farmers all the way from the Atlantic to the Pacific in latitudes north of the Ohio and Potomac Rivers. It is one of the most serious weed pests known in America. The grass grows under a great many dif-

ferent names, among them couch grass, witch grass, and twitch grass.

The author of this bulletin has spent a number of years making a close study of the grass under field conditions all over the northern United States. Based on this thorough knowledge of the field habits of the grass, experimental work was started, which quickly resulted in a complete, cheap and practical method of eradicating the pest.

Farmers' Bulletin 464, embodying this work, can be had by applying to your Senator, Congressman or directly to the Department of Agriculture at Washington. It is well worth the perusal of all who are interested in such matters.



The Crocus as a House Plant

THE crocus is not commonly used for an indoor flower, but we have found its virtues many and its vices curable, and we prefer to do without something else, if necessary, for the sake of having this delightful plant in the house. Its blossoms almost rival the tulip in the variety of their colors, showing also various shades of purple not to be found in the narcissus and the bright yellow that is so rare in the hyacinth. A pan containing one or two dozen crocus corms, all at the blooming stage, is a sight to be remembered, and the flowering season for the crocus is a long one. Ours often continue in bloom for four, five or six weeks, while we are well satisfied if the narcissus has half this time of blossom. The corms and full-grown crocus plants are so small that many can be crowded into a small space, which is an advantage in handling and caring for them in limited quarters. They are inexpensive enough to satisfy the most frugal mind, some reliable houses offering them for ten cents a dozen and fifty cents a hundred, while even the best varieties, that are more desirable for the purpose of home bloom, only cost about half as much again. To grow crocuses in the house it pays well to get the finest kinds. A first quality corm will measure four inches around and ought to send up from six to a dozen flowers, which is another advantage over many bulbs more commonly seen in window gardens, some varieties producing not more than one flower to a bulb.

Good garden loam and sand, with a little very old manure in the bottom of the pot, is what we have used for potting crocuses. When the soil is procured the next step is to set the corms, flat side down, leaving half an inch or more of space between them, and taking care not to press them too hard, lest the roots lift the plants. When this is done, fill with soil enough just to cover the tips. The potting itself should be done as early in the fall as the corms can be bought, for

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the crocus gains nothing by being left out of the ground to waste its vitality. We often plant in a "seed pan" because we like the effect of a dozen or more plants blooming together. A flower pot sufficiently broad would be unnecessarily deep and heavy. The three or four inch depth provided by the "seed pan" is all sufficient for the slight growing crocus.

After potting, the soil should be moistened and set away in a dark, cool place of from forty to fifty degrees for about two months, until there is a vigorous root growth. There is more danger in bringing them into the light too soon than in leaving them in the dark too long, for the flowers depend on the strength of the root growth. However, if the leaves insist on growing in defiance of the darkness and coolness, they may as well be brought to the light, or they will acquire a spindling shape that cannot be corrected later. This state of things should be prevented by having their storage place as dark as possible, but this brings us to some of the small failings of this particular plant.

Our crocus, so attractive when once grown, has had a narrow escape from being destroyed by mold. A degree of dampness that did no harm to the narcissus, was almost too much for it. Wetting only when it seems to be becoming too dry for any growth is the safest remedy for this. The crocus is also attractive to mice, and to guard against them a mouse-proof box should be built with ventilation provided for by several holes in each end, the holes themselves being covered with window screen netting. Crocus plants have a fascination for the green aphis, which must be fought from the start before it increases to great numbers. Tobacco in the form of smoke, dust or tea will check the pest if used in time.

Naturally the best flowers must not be expected from corms that are imperfect or bruised; these invite decay and contaminate the healthy bulbs. The crocus is one of the plants that require slow forcing, which brings them into flower in mid-winter when their bright colors are most appreciated. In rearing them some points are to be kept in mind that are common to all bulbs: water well when coming into flower; supply with fresh air, but without draught; keep free from dust. Hot, dry air, such as would be found in a fire-heated room will not agree with them. The conditions under which we have grown them seem to suit them excellently—a light and very sunny room, where the temperature stands in the sixties in the daytime and lower at night.

The crocus that has bloomed in the house may be dried off gradually in a light cellar until the foliage is entirely dead and then planted outdoors in early September. The lawn is a good place. Lift a sod, set out the corms, replace the sod and in the spring the leaves will force their way through and the foliage die away before it can be injured by mowing the lawn. Crocuses planted in the garden will give

(*Continued on page* 150)



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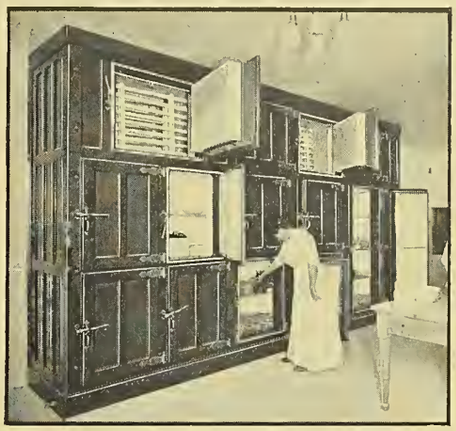
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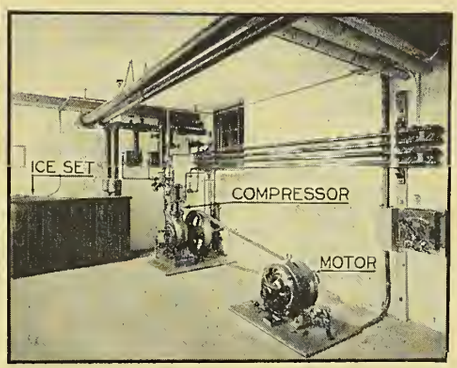
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is a literary gold brick, in a manner of speaking. Its cover design may be deceptive as to what it conceals in the way of reading matter.

Some magazines depend largely upon their exterior appearance to sell them; their interiors are not up to the standard outwardly displayed. Others back up striking cover designs with real merit in the reading pages, and in this class is

Travel

The cover of the February number shows one of the most famous churches in all Europe—the *Frauenkirche* in Nuremburg. In front of the great, brown edifice are market women plying their trade in the shade of huge umbrellas. Within the cover are these and other features:

Irkutsk the Unregenerate
Seattle and Two Neighbors
In the Shadow of the Matterhorn
Cairo, Old and New
Madeira, an Island of Enchantment

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JAMES VICK'S SONS, Rochester, N. Y.
18 Stone Street The Flower City

(*Continued from page* 148)

much better returns if set in September than later, for in the fall they make their buds ready for spring weather at that time. If set as late as November the corms will send up very little bloom. Mulch for winter with two or three inches of coarse litter, and lift and re-set every three or four years, before they push out of the ground. They require a warm, dry spot for favorable growths.

The crocus can also be raised in water indoors if the choicest bulbs are chosen, but on that subject we cannot speak from experience.

The following table shows the dates on which we have potted, and brought the crocus to the light. Also the dates of first and last bloom of this attractive flower:

Potted.	Brought from Cellar.	First Flower.	Last Faded.
Oct. 19	Dec. 19	Jan. 28	Feb. 25
Dec. 16	Jan. 16	Feb. 16	Feb. 28
Oct. 29	Dec. 24	Jan. 27	Mar. 12
Oct. 29	Jan. 14	Feb. 28	Mar. 12
Oct. 5	Dec. 7	Feb. 13	Feb. 27

I. M. ANGELL

Edgings for Garden Walks

BOX edgings are troublesome, liable to great irregularities, apt to harbor insects, and suitable merely for quaint figures and old-fashioned geometrical designs. They are the proper accompaniments of parterres and small flower gardens that are laid out with numerous narrow gravel walks. The dwarf gentian if planted in double rows in soil that suit it sometimes, makes a neat edging. Heaths, also particularly the common Lyng (*Calluna vulgaris*) may, when promptly trimmed, produce an excellent edging for a heath garden or bed of American plants. The smaller periwinkle, kept in due limits, is useful, as an edging under trees, as is the common ivy.

The most valuable requisites in an edging are neatness, diminutiveness, or capability of being regularly trimmed, quietness of appearance or harmony with whatever is behind it, and permanence. In each of these respects grass will, in nearly all circumstances, have the advantage. The common heath is more expressive and characteristic, however, near rocky surfaces.

W. R. GILBERT

Filling the Ice House

ON most small country places ice is stored in winter for next summer's use, and in many instances where the tyrannical ice-man is now depended upon, a small icehouse might be profitably used in his place. Very often the mistake is made of waiting for thick ice, in the belief that labor is saved thereby. This saving is a very doubtful one, however, as it takes longer to handle very heavy cakes, and the ice is very seldom as good as the clear first freezing, which can be had, usually, eight to ten inches thick. A space of about a foot should be left between the ice and the side walls of the house, to be packed firmly with sawdust as the house is filled.

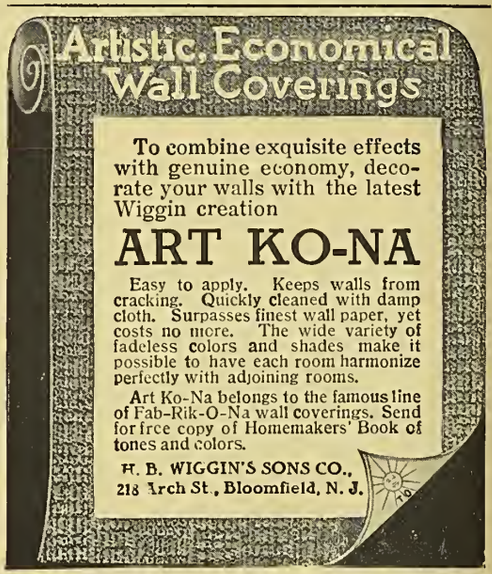
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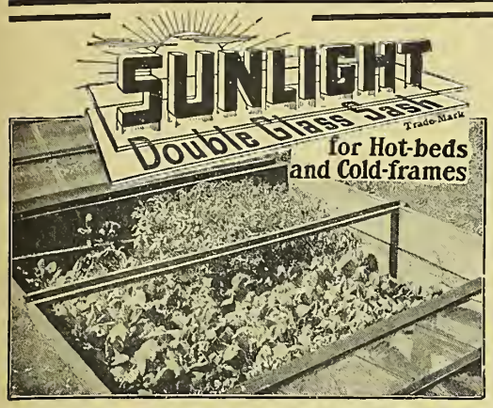


A Snug Home for a Young Couple

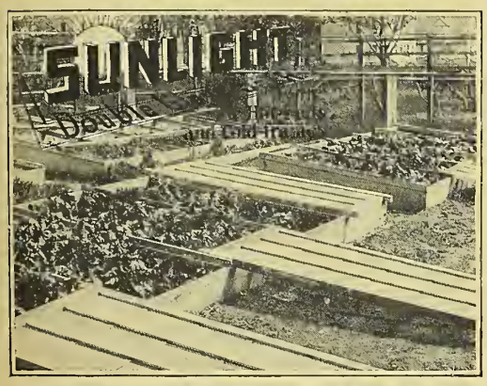
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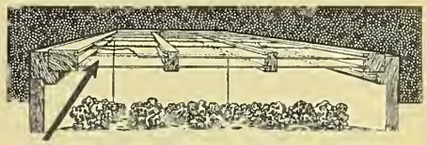


All you have to do with Sunlight Sash is to tilt them up on warm days. Mats and boards are unknown to Sunlight Sash users

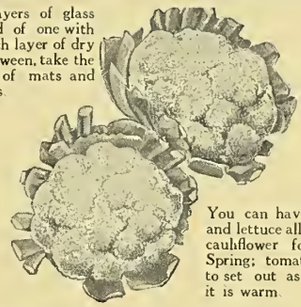
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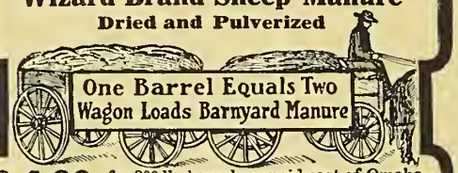
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White Pine planted 28 years. Timber alone worth $200.00 an acre.



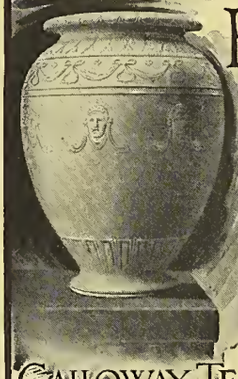
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3218 WALNUT ST. PHILADELPHIA

The Vital Functions of Light in the Home

(*Continued from page* 96)

direction of the side walls, with much less light thrown upward, and downward, the enclosing ball of opal would cut off by absorption some of the side wall light, but would increase by diffusion the light in the upper and lower portions of the room.

In the diagram shown the heavy horizontal line passes through the center of a light source, which distributes its light without any enclosing globe as shown by the outline. In other words, it distributes the greatest light at an angle of forty-five degrees below the horizontal, with scarcely any light directly beneath the lamp.

Outline II shows how the distribution of light was changed by placing a cylinder of ground glass over the source—there being a slight loss by absorption of the glass, but practically no change in distribution.

Outline III tells a different story, however, for *above* the horizontal a great amount of light is thrown, simply by placing a cylinder of opal glass over the source. It will be noted that the increase above the horizontal is accompanied by a slight decrease below, but the object of the test was to prove that distribution of light can actually be changed by enclosing opal globes, and that, moreover, without distortive spot light effects. The thing to remember is that these observations apply only to enclosing globes, and that the light will be distributed about enclosing opal globes in a form similar to their shape.

Upon page 95 is an example of an interior marred by the use of ground glass globes. Cover the upper portion of the picture by placing the first finger transversely on the page, hiding the lights, and note how pleasing the effect is. The presence of glaring light sources in the visual field is not only a distracting factor, but a perpetual menace to eyes and nerves. With the wonderful economy of modern illuminants there is no longer need to sacrifice artistic effect, appearance and eye comfort, all for an extreme and fanatical re-distribution of light. Place your illuminants in attractive globes of the densest opal, and rest assured that there will be ample light emitted for all useful purposes. The pleasure to be derived from artificial light sources which can be regarded fixedly without annoyance, which are a part of their environment and delight the eye, is wonderful.

Very often light fixtures are so constructed that opal glassware can only accomplish the elimination of glare and harsh white light. The above is such an example, and one which is very common, particularly where the appropriation for fixtures is limited. The difficulty in this case is with the fixture arms, which are incorrectly placed at an angle. The position of the illuminants is such that if their tips are exposed by globes having an opening, as illustrated, the effect is very

(*Continued on page* 154)



ROSA SPINOSISSIMA

Rosa Spinosissima

WE have again succeeded in getting a stock of this rare and exquisitely lovely hardy single white Rose. With the exception of the marvelous Cherokee Rose of the South, it is the most beautiful single rose in the world. The plant is compact and bushy, growing four to five feet high, and in June it is covered with large yellowish-white flowers of indescribable beauty. It should be planted in groups, and like the *Rosa Rugosa,* it can be used in the shrubbery. Coming from Siberia, it is absolutely hardy. Limited stock.

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Good plants 30 cents, $3.00 per dozen

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Can be installed without aid of a mechanic.

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103 Walker St., N. Y.

glaring, similar to that of ground glass globes in a pendant position.

By bending the arms as shown very clearly in the drawing which appears at the bottom of page 96, and using an enclosing opal globe, reading conditions would be greatly improved and more light directed below the horizontal. Of course amber film should be used for color modification, and the design of the globe should be selected to harmonize with the motif of interior decoration.

The glassware shown on the modified fixture is of the semi-enclosing type, and should never be used in the home, since it suggests by its ribbed effect the prismatic type of glassware so devoid of beauty and so commonplace through its commercial application.

In some instances where period expression suggests the use of cut glass in prism form, as illustrated, it is desirable to allow direct rays of light to impinge upon the inner facets of the prisms to obtain life and sparkle. Such fixtures are always marred, however, by the characteristic white light effect of modern illuminants. Amber film in cylindrical form will give the desired color modification, without distracting from the brilliancy of the prismatic effect which can then be observed without eye-strain.

Several glassmakers offer prisms made from iridescent opalescent glass, which are most attractive. Wherever fixture finishes obtain in mellow gold tones, do not forget that a white light makes them harsh and garish, while amber deepens the color value and adds tone, expression and ensemble.

In all cases where delicately etched and colored glassware is involved, particularly on side wall fixtures, the brightness of the source must be greatly subdued to avoid obliteration of ornament. The decorative value of the side wall lamp lies in its expression and symbolism. Modulation of quality of light is imperative, nothing being more incongruous or inartistic than a violent splotch of light against the wall directly behind the lamp. A soft and subdued tone may be effected by placing absorbing screens of etched mica, superimposed, until the most agreeable density in wall tone is attained, contributing to that essential feature of decoration-shadow. The significance of the side wall as a desirable location for an art lamp lies in the opportunity which it affords to express character in lighting, and to reconcile light and decoration in an appreciation of the beautiful.

A Correction

ON page 14 of the January number of HOUSE & GARDEN the house attributed to Charles Platt as architect should have appeared as the work of Aldridge and Delano, architects. The house in question is the home of Mrs. C. B. Alexander, of Bernardsville.



for the Coming Year

Motor Fashions — **January 1**
Smartest novelties for owner, guests, car and driver.

White and Southern Fashions — **January 15**
The trend of coming styles as seen in the Southland.

Smart Fashions For Limited Incomes — **February 1**
First aid to the fashionable woman of not unlimited means.

Forecast of Spring Fashions — **February 15**
The earliest authentic news of the Spring mode.

Spring Patterns — **March 1**
Working models for one's whole Spring and Summer wardrobe.

Spring Dress Materials and Trimmings — **March 15**
How the Spring models shall be developed.

Spring Millinery — **April 1**
The newest models in smart hats, veils and coiffures.

Spring Fashions — **April 15**
The last word on Spring gowns, waists, lingerie and accessories.

Bride's — **May 1**
Late Spring fashions and special bridal interests.

Summer Homes — **May 15**
A journey "thro' pleasures and palaces" in Newport and elsewhere.

Summer Fashions — **June 1**
The final showing of the Summer modes that will be.

European and Travel — **June 15**
Where to go, how to go, what to wear and how to wear it.

Hot Weather Outing Fashions — **July 1**
The correct wardrobe and equipment for all outdoor sports.

Vacation — **July 15**
The perennial interests of Summer described and pictured.

Outdoor Life — **August 1**
The beau monde at play in Newport, Bar Harbor and the Berkshires.

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Imagine the keen pleasure it must be to sip one's coffee and crunch crackley toast on a winter's morning midst a flood of sunshine and surrounded by cheering blooms.

Anyone who cannot enthuse over such ideal breakfasting conditions is indeed stolid.

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No other construction is constructed like it.

Being airy and free from heavy framework, it is particularly adaptable for conservatory treatments.

It may cost a bit more than other constructions—but it's worth it. In comparing it with other constructions you will readily recognize the worth of the difference.

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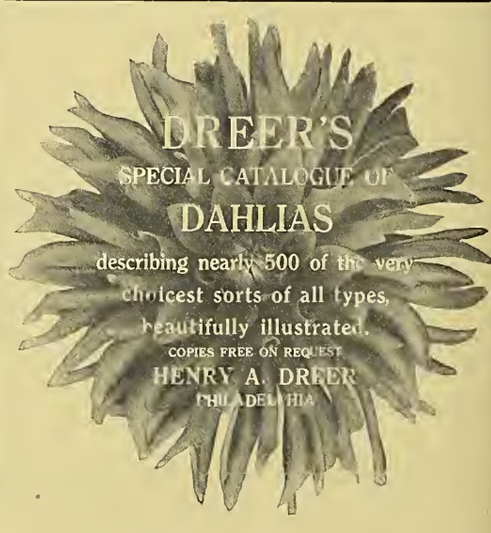
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The Diamond Jubilee edition of Dreer's Garden Book describes and offers nearly 5000 species and varieties of Seeds, Plants and Bulbs, which include really everything worth growing in this country. Many of the sorts are illustrated, and practical cultural notes on flowers and vegetables make this book of greater value than any half dozen books on gardening. *Mailed free to anyone mentioning this publication.*

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Selling an automobile on paper involves two things: unbounded confidence in the maker and unapproached beauty in the car.

This explains why the mere announcement of the magnificent New Baker Coupe resulted in the sale of hundreds of cars throughout the country, even before the first lot had received the final touches in their careful course through the big Baker plant.

There could be no more emphatic proof that this handsome model—the latest creation by the oldest, foremost and largest electric car builders in the country—fully meets the public demand for a thoroughly stylish, yet conservative, coupe. It is a big, roomy motor car, with full limousine back, longer wheel base, graceful low-hung body lines, and new hoods of French design.

REVOLVING FRONT SEATS are one of the innovations introduced in this Baker Model. These permit the occupants to face forward or turn about, while an easy view of the road is secured from the rear seat because of the exceptionally low front and front quarter windows.

Either Lever or Wheel Steer

The former from rear seat, the latter from left front seat (with controlling lever attached to steering mast). In every detail the new Baker Coupe strikes the last note of supremacy in convenience and luxury.

Baker luxury is the enduring kind because the car itself was built *first;* the luxury was added afterward. With Baker beauty is unquestioned mechanical excellence—the kind that gives the car its long life: its ability to climb hills, plough through snow, sand and mud and stand up under the hardest service, always at a *lower cost of upkeep* than any other electric.

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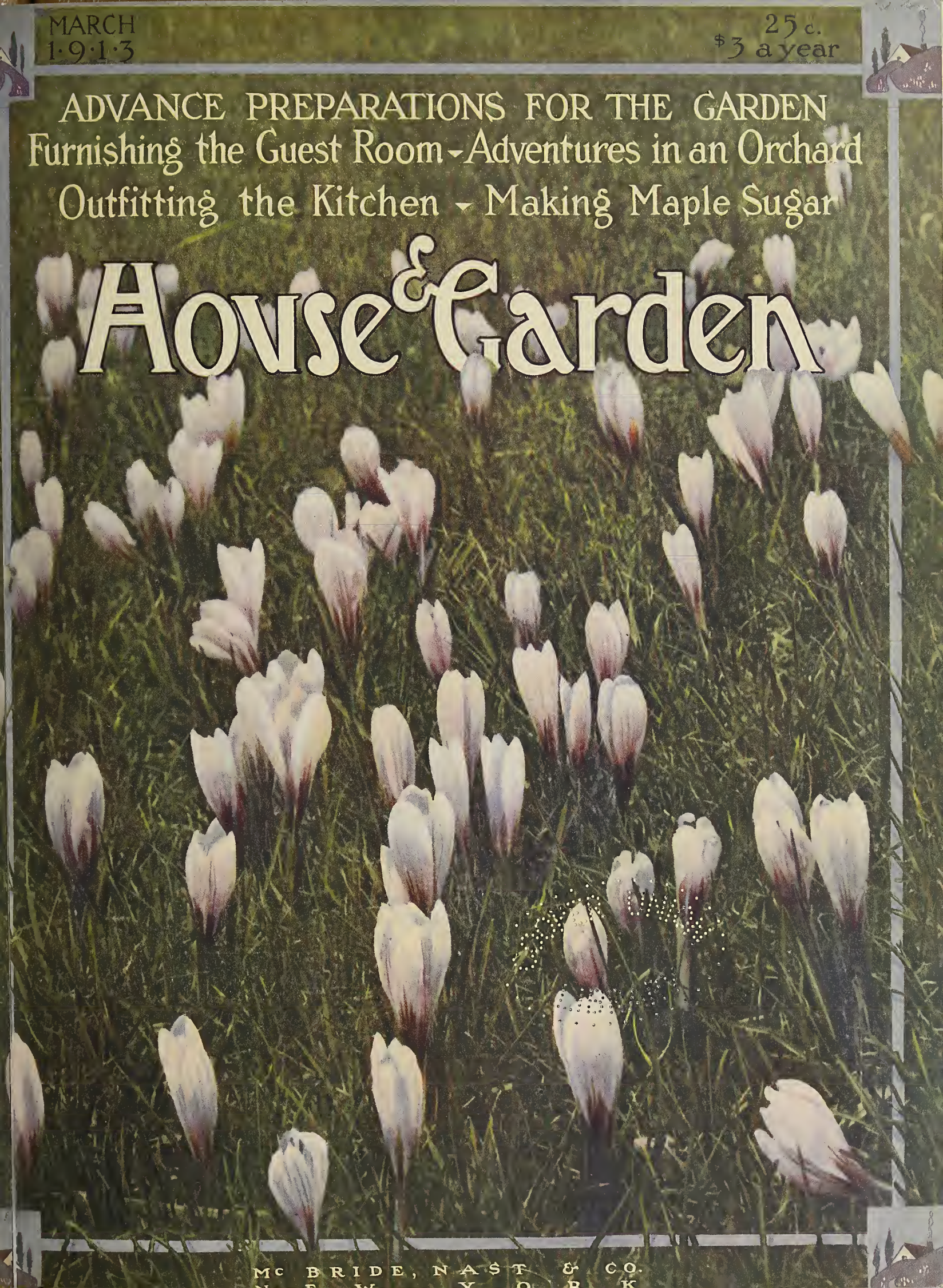
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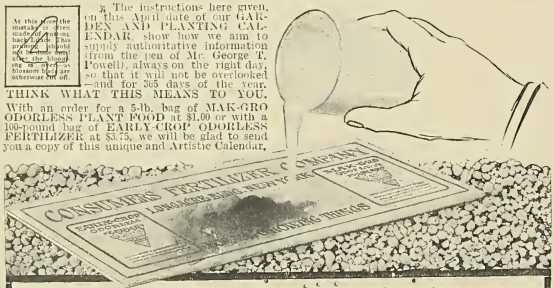
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"I have always blessed the day when I saw in 'Country Life' the modest advertisement of 'A Little Book About Roses.' Five or six years ago it was, and the results of that introduction to you have added beauty and happiness to every year."

GEORGE H. PETERSON

Rose and Peony Specialist

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¶ The instructions here given, on this April date of our GARDEN AND PLANTING CALENDAR, show how we aim to supply authoritative information (from the pen of Mr. George T. Powell), always on the right day, so that it will not be overlooked until for 365 days of the year.

THINK WHAT THIS MEANS TO YOU.

With an order for a 5-lb. bag of MAK-GRO ODORLESS PLANT FOOD at $1.00 or with a 100-pound bag of EARLY-CROP ODORLESS FERTILIZER at $3.75, we will be glad to send you a copy of this unique and Artistic Calendar.

Saturate part of a clean Blotter with ink — Let it dry thoroughly — Pour water on it — Notice how the dry ink re-dissolves and runs into the freshly-moistened fibers of the still clean part of the blotter. This will suggest how, in like manner, the grains of our EARLY-CROP

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Pennsylvania Station, New York, from which trains run to Long Island Points.

Long Island Offers a Wealth of Opportunities for the Homeseeker

YOU can't "talk suburban homes" without mentioning Long Island. It is the HOMELAND on the tongue of everyone who loves all that the name HOME implies. When you go to Long Island you're not a pioneer—thousands of homeseekers have blazed the trail; have settled there in congenial communities, established schools and churches, organized clubs for men and women; beautified the surroundings, caused stores of every description to be built. You're not going to a land of promise, isolated from the world's greatest amusement and business center. The transit facilities, like the improvements in each town, are there now. No one, seeing, denies the wonderful superiority of Long Island over all other suburban districts in climatic conditions, due to salt-water surroundings, the healthfulness resulting, its unique and endless variety of sports or recreations, its perfect roads, and physical advantages.

The Long Island Railroad has spent millions of dollars to facilitate traveling, installing electric service, modern station buildings, and tunneling under the East river to the center of Manhattan, to the colossal $100,000,000 Pennsylvania Station, Seventh Avenue and Thirty-second Street.

Unlike other suburban sections that offer but one "lay of the land" for homeseekers to choose from, Long Island offers many, embodying hills, valleys, plains, farmland and the shores of beautiful bays, lakes, Sound and the mighty and majestic Atlantic Ocean. Think of it! Any condition and setting for a suburban home less than an hour away from the greatest city in the world. There is nothing like it, nothing to compare with the advantages offered homeseekers to locate on Long Island. Go there NOW to live. Have an early choice of its beauties, its investments, its opportunities for health, pleasure and profit; for the summer or for the year around

A book has been written, profusely illustrated, showing this wonderful diversity of hills and plains, lakes, meadows, the wealth of water privileges (like nothing else in the world), its summer resorts and its wonderful climate. The book is for you. Do not turn aside from Long Island until you have written to the General Passenger Agent, Long Island Railroad, Room 371, Pennsylvania Station, New York, enclosing ten cents postage for your copy.



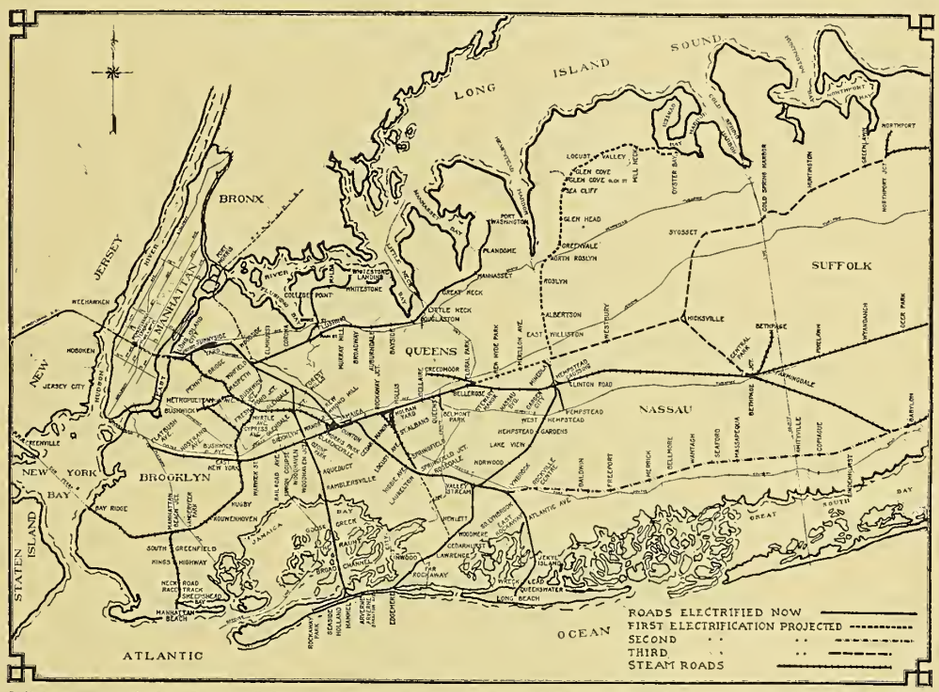
What Long Island Offers the Home Seeker

BY A. W. DEAN

TEN years ago Long Island was little known outside Brooklyn, even to New Yorkers. It was considered inaccessible and regarded as a mixture of waste land and flimsy summer cottages. To-day the Long Island service is extended to the remotest ends of this one hundred and thirty mile strip of land. It has added electrified roads, so that distances beyond thirty miles from the city are brought within commuting accessibility available for almost everyone. As a vital factor in the life of our largest city, Long Island is of great import. From the census of 1900 to our last one the population of the five boroughs of New York City has increased thirty-nine per cent, or over a million and a third, a greater percentage increase than ever occurred before. Manhattan is greatly congested, and has but a limited opportunity for extension. In the days of Malthus, wise heads would be dubiously shaken when the future of the city was considered. But the rediscovery of Long Island has made it a factor in not only increasing the possibilities for better homes, but also adding to the daily supplies of food stuffs. The Island is unique in the number and diversity of its opportunities. Its importance may be judged when it is considered that its population equals that of New Jersey, and is over double that of Connecticut. Yet all this great section has been so closely connected by a network of railroads that practically two-thirds of its extent is within easy commuting distance of the city. Along the rolling hills of the north, with the beautiful harbors, home sections of all sorts are in touch with the city. The farms in the center of the Island are able to bring in their products as quickly as if they were on the immediate borders of the metropolis. The anomaly of a seaside home in connection with the city is changed here. For there are many dwellers at the ocean edge who are as close to the heart of New York City as though they lived in uptown Manhattan.



The beach at Long Beach offers wonderful opportunities for surf bathing and a climate pleasing the year round



This map of the Long Island Railroad shows how the system has been extended and its efficiency increased by electrification. The projected roads that will open up all this territory within the near future are indicated in the key

As the Long Island road is about to open a new electrified branch of its service to Port Washington, it seems fitting that some of the manifold opportunities of this section be spoken of, and that the great assistance to metropolitan congestion might here be shown. Noticing the map on this page, it will be seen that electric roads run from the Pennsylvania Terminal to Port Washington, to Mineola, to Long Beach, and to Far Rockaway. Later the work that



Laurelton shows well-shaded streets and pleasing lawns that are without the appearance of bare newness



At Wampage Shores near Port Washington there are interesting driveways and pleasing buildings of a good type

PANORAMIC VIEW OF THE ESTATES OF GREAT NECK



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Here is the atmosphere and charm of your Old Family Home, with the advantage of being able to indulge in your favorite sports by merely putting on your hat and walking out of the house. An ideal place for the children, who eventually would commend your foresight in purchasing a home in such an environment.

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North Shore, Long Island, within commuting zone, 90 acres, picturesque, rolling land, ½ under cultivation, balance fine woodland. 50 feet elevation, 1,000 feet of white sandy beach, unobstructed views of Bay and Sound. Excellent estate property. Will divide. Price $800 per acre. For further particulars apply to
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Complete Country Home

with chickens, cow barn and stable or garage, in

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most exclusive section. Two acres of ground, with garden and tennis court. House stucco, adapted to year round residence. Five master's bedrooms, 2 baths, and quarters for 3 servants with bath. Large rooms on ground floor. Southern exposure and attractive location. Price $25,000. Best value in GREAT NECK to-day. Come and see it and judge for yourself. Also other desirable properties at Great Neck for sale and to rent.

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Provides the opportunity to purchase residential plots or houses amid agreeable surroundings, with all improvements supplied.

COUNTRY HOMES IN NEW YORK CITY

Reached in 35 minutes from 42d Street, by automobile, by subway to Van Cortlandt, or by New York Central trains, both divisions.

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A home that combines the advantages of delightful country surroundings, accessibility to the water and a pleasant social environment, leaves little more to ask for.

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includes all these advantages in an exclusive residential colony with every modern convenience near New York.

Its location on the waterfront appeals especially to the yachtsman who will find safe anchorage to accommodate any pleasure craft and the whole of Long Island Sound in which to cruise and race. The casino with spacious living room, dining hall, bathing apartments, wide verandas, etc., reserved exclusively for residents of the colony will be the natural center of all social activities.

The plots are generous in size, unique in shape and outlook and lend themselves readily to individual treatment in landscaping and architecture.

It is essential that purchasers be creditably known to owners. You would enjoy a run out to GRENWOLDE. Full directions, road maps and detailed information sent you for the asking.

PAUL V. SHIELDS
286 Fifth Avenue, New York
Telephone, 1926 Madison Square



The home of Mr. Carleton Macy at Hewlett, Long Island, a section that has become noted for the good architecture of its homes



A stucco house at Long Beach that is representative of the high class dwellings being erected there

has already been started will open up the branch to Oyster Bay, then the branch from Lynbrook to Babylon, and finally that from Floral Park to Northport. So that all this section will be within an hour of the heart of New York. Let us note the characteristics of sections in order to show that this great district renders available a country home to the city man of all degrees of cost and kind, from the great estate to the suburb proper, and from the residential section to broad farm land.

There are various places within the metropolitan district suburban in character. Flushing is on the north shore on the Sound, a district of well-shaded streets. It was once an old, Dutch village, and has the look of a settled community. On another branch the electric trains of the railroad reach Forest Hills, Kew, Richmond Hill, Jamaica, and farthest out, Garden City, which, however, is only eighteen miles away. After what appears hardly any time at all, the train from New York comes from the tunnel and stops at Forest Hills, where under the direction of the Sage Foundation a model settlement is being erected. The best precedents of European rural architecture have been followed, and the latest advances in building and sanitation and lighting have been adapted. Kew and Richmond Hill also have homes that are architecturally beautiful and at generous spacing. And even on the edge of Jamaica the homes are placed as in a wide rolling park. Another branch of the railroad goes to seashore homes, but at about the same distance from New York. Here in sight of the sea, but with woodland roads and landscaped lawns, some of our best country house architecture may be found at Hewlett, Woodmere, Cedarhurst, Lawrence, and Far Rockaway. And on another spur of the same division the road goes to Long Beach, where a cottage settlement has been built about a great hotel facing the sea. These sections mentioned have all been built up according to the best ideals, and afford country homes at a great range in prices.



On the Estates of Great Neck there is beautiful woodland as well as water front property

Going along the north shore by way of the new Port Washington division, one enters the district of great estates bordering on the Sound. In this district development companies have rendered homes that are estates to individuals. For the corporation is enabled to accomplish just what the individual of large means is able to do for himself, and in reality the homes here have all the advantages of landed estates. The most distant on this division will be within about thirty minutes of the heart of New York.



The home of John R. Hoyt in the Great Neck district of easy approach on the newly electrified line



Great care was taken in the Estates of Great Neck in the layout of fine, curving driveways and interesting landscaping











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At SALTAIRE the broad expanse of the great Atlantic Ocean is in front of your porch; the Great South Bay is your back yard; the New York State Park to your right; SALTAIRE Harbor to your left.

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At SALTAIRE the nights are cool and restful and the salt-laden atmosphere is invigorating.

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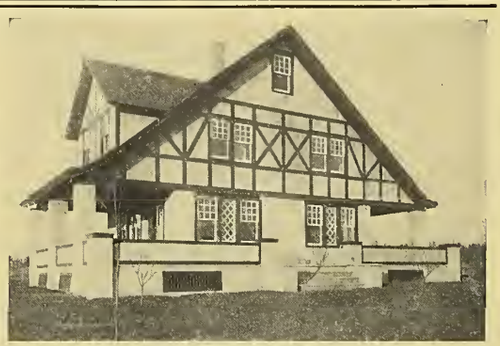
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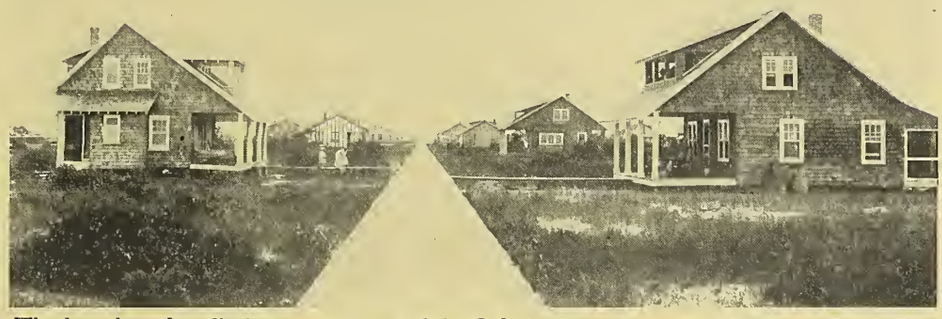
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This is characterized by the Estates of Great Neck. The chief developments are along the Sound, and with the various beautiful harbors afford unusual opportunities for sailing and bathing. The enjoyment of these pleasures is greatly assisted by some of the best-appointed country clubs in the East. Continuing further along the coast, but on the Oyster Bay division, the towns of Roslyn, Glenhead, Glen Cove, Locust Valley and Oyster Bay are passed through. The general characteristics of these sections are quite like that of the previous one. Magnificent homes of individuals adjoining the beautiful developments of property where the landscaper's art has vied with the proficiency of the engineer in making the district livable and attractive.



Along the crest of the beach at Saltaire bungalows of an interesting character have been constructed



The long board walk that passes most of the Saltaire houses connects the Great South Bay with the ocean beach

On the Port Jefferson division, which runs from Jamaica via Hicksville to Northport, are the towns of Cold Spring Harbor, Huntington and Northport, and within commuting distance of the city all the year round. All this district enumerated is covered with a network of wonderful roads that wind up hill and down dale, through woodland and forest, giving the traveler the impression of being miles from city streets. It only takes a few minutes by machine to turn inland from the railroad and to reach the rolling farms or estates of the country gentlemen.

The south shore is flatter, and the major part of its inhabited coast line fronts upon the Great South Bay. Rockville Center, Freeport and Amityville have, near the railroad, the more modest homes, and within automobile distance the acres of the wealthy. In the neighborhood of Babylon and Bayshore, about an hour out from town, is Brightwaters, where the home-seeker may choose a water frontage, a site on the pretty lake a little further inland or the pine woods beyond. As one goes still further eastward to Islip, Great River and Oakdale, one reaches another section of pretty parks and expensive properties of wealthy individuals. Beyond on this southern side comes a section of beautiful summer homes at Blue Point and Bellport, Westhampton, Quogue, Southampton and Easthampton. Westhampton is delightful in that the bay and the ocean are both easily accessible, and this town with Quogue and the other Hamptons is in the famous Shinnecock Hill district, where rolling dunes approximate Surrey scenery. The strip of sandy beach that separates the Great South Bay from the ocean is now being developed as a summer section, and kept in touch with the railroad by a fast launch service. Here at Saltaire a recent discovery of science will turn the power of the waves into electric current.

Between these two varied coast districts that offer beautiful home sites lies the Middle Island. Out from Jamaica in the neighborhood of Westbury are the large, expensive homes of those whose chief interest is in horsemanship and stock raising. A little further beyond, at Hicksville and Farmingdale, are large truck farms that are in daily touch with the city. The section beyond this in the center of the Island was formerly considered waste land. But under the efforts of the President of the Long Island Railroad, an Experiment Station was started at Medford and another at Wading River, farther out. The result of several years has been to show that all this area is exceedingly suited to cultivation. Indeed, it was discovered that three hundred and eighty varieties of plant growth could flourish here. And as the first Station was placed on the worst ten acres that could be found, the conclusions are not at all over-estimated. Vegetables of all sorts and exceedingly fine quality have been marketed from these Stations, and as the expense for clearing the land can, in many cases, be met by the sale of the cord wood, there are exceedingly good opportunities for



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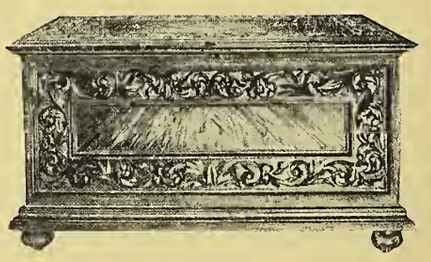


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Roslyn Estates on the North Shore is spoken of as a colony of private estates, and is one of the interesting inland sections, graced by all types of architecture of exceedingly good types

farming here. This activity under the direction of Mr. Fullerton has gone to prove that this inland section, not only the sandy strip, but the scrub oak places, is particularly fitted to become an agricultural district with fine transportation and exceedingly advantageous physical and soil conditions. This district extends from the pretty inland lake of Ronkonkoma out to the beautiful clear-water bays of Great and Little Peconic, Shelter Island Sound and Gardener's Bay.



The land is high at Northport and from many places such as Sunset Hill a view of the harbor is to be had

This brief geographical description should go to show that within a comparatively small area there are conditions which do not exist in any other single section. Beauties of scenery, rural and suburban homes of all sorts, profitable farming opportunities, poultry farms whose location gives them advantage over their rivals, pleasures of Sound and Bay and Ocean, and all this rendered so accessible that the entire district has almost been brought within the metropolitan boundaries.

When the projected electrified roads are completed, this condition will be improved still more. And it will render New York unique as a city. For although some suburban sections are older and more finished, they do not offer anything like the diversity of attraction to be found here. And one feature of the growth that is very satisfactory to consider is that almost all the work that is being done is of exceedingly high class and made under the most advanced ideas in building and engineering. As the farm land becomes developed, Long Island may find itself self-supporting for its products, and besides able to help solve some of the pressing problems of living costs that oppress the metropolis to-day.

In addition to these various advantages there is another factor of attractiveness still to be mentioned —the social life. Many consider that rural or suburban districts are dull places, lacking culture in the metropolitan sense. Nothing could be further from the truth here. On Long Island has grown up a new sort of American social life, that, as in England, clings about outdoor sports. The various country clubs provide interesting centers for gaiety that is by no means limited to the summer colonies but flourishes in winter also. Some of these clubs are as pretentious as the Piping Rock Club—perhaps the most perfectly appointed club house in the country, with a system of bridle paths extending for seventy miles—others more modest, but each offering many diversions to a refined membership.



Shoreham is beyond Port Jefferson, with most of its houses built overlooking a broad expanse of Sound



Brightwaters offers a variety of home sites on the South Bay and an interesting section among the pines



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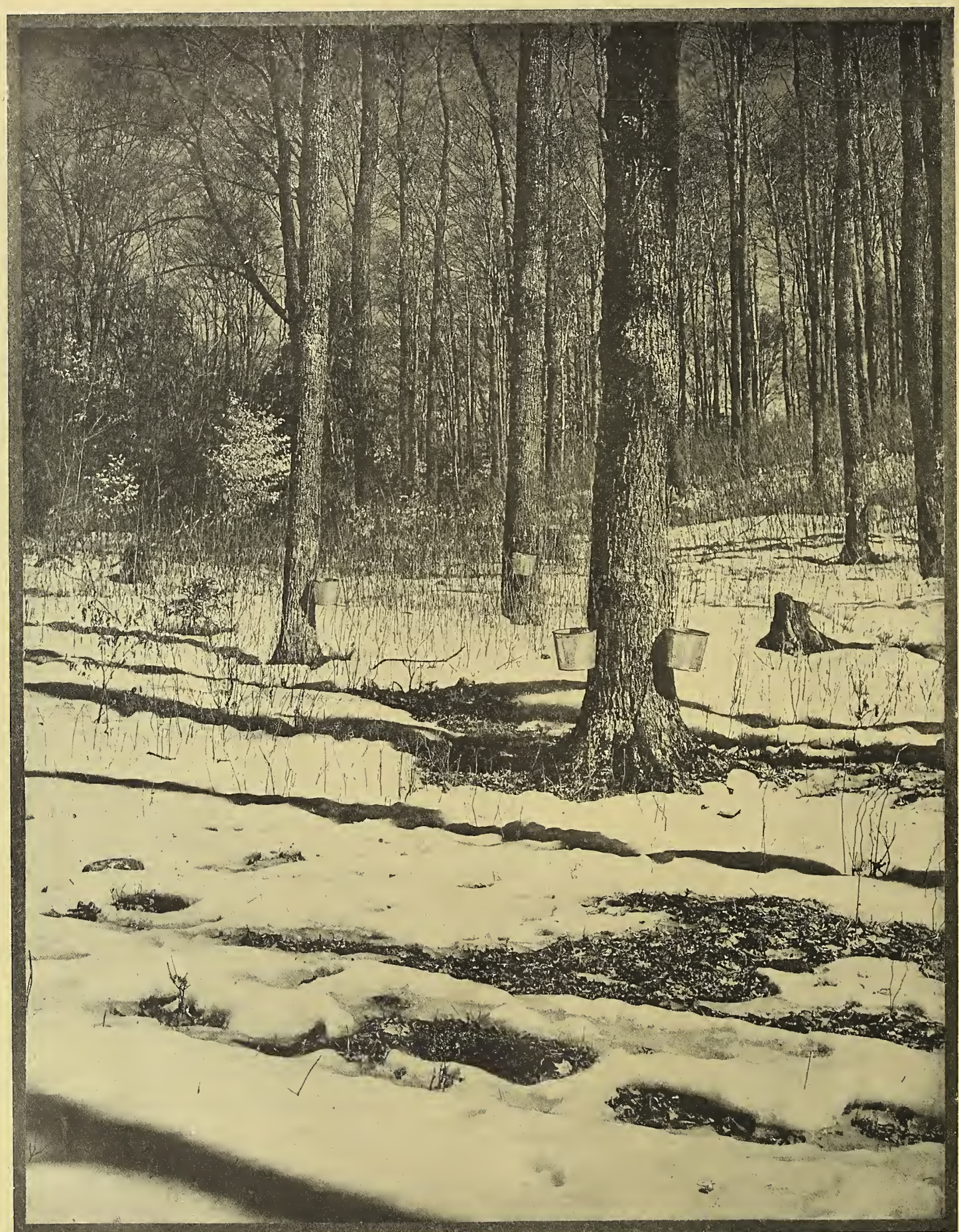
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HENRY H. SAYLOR
Editor

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The ideal sap bush has a thick cover of leaves and overgrowth of small seedlings. Those who find such natural opportunity may well take up the occupation of sirup making, both for its delights and its profits. What is more, it comes at a time when there is little else to do in the country

House & Garden

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VOLUME XXIII March, 1913 NUMBER 3

The Vital Functions of Light in the Home

BY F. LAURENT GODINEZ

EDITOR'S NOTE: *This is the third paper by Mr. Godinez in which he gives the results of experimental research in the subject of home lighting. Previous articles dealt with the subject of eye-strain and the avoidance of glare. This article illustrates types of satisfactory lighting, and gives practical demonstrations of what may be done to make light a factor in decoration. The next and last article will explain by diagram ways of reproducing the suggestions given this month.*

IN selecting lighting glassware for the home apply the acid test of logic in practical form. Satisfy yourself as to the physiological value of your purchase. Is the glaring source subdued? Can one regard the lighted globe without ocular discomfort? Then, from the esthetic viewpoint, is it commonplace and ugly, or unusual and attractive? As a part of your decorative treatment, does it express harmony? In reply, the circumstantial evidence of the glass-maker will enable you, the judge, to make your decision. And when you make it, bear in mind that in the days of the oil lamp, eye-strain from artificial light was not so serious as it is to-day. Eliminate the evil by restoring those agreeable conditions. Make your lighting glassware assist, and select it with care and discretion.

The globe which has the property, by diffusion, of concealing the glaring tungsten lamp and of suggesting the mellow, restful tones of the oil lamp, by color density, is the one to use. Have no fear as to its placement, or its effect on visual functions. Even on lighting fixtures hung so low that their globes are constantly in the visual field, it may be used to correct injurious conditions.

Do not feel that light is wasted in using dense globes which decrease source brilliancy and modify it as to color. The thing which the illuminant manufacturer has done most satisfactorily is the production of illuminants which quantitatively are economical, but it remains for the user to make some of them safe and adaptable to individual requirements.

It is most interesting to note that the globe which really meets esthetic requirements can never be productive of glare, since the glaring splotch of light so offensively distortive of detail is a vulgarity opposed to artistic expression in any form. Hence in judging globes, relatively, as a part of a decorative whole, that which satisfies the esthetic demand is quite likely to satisfy the physiological. In regard to the latter, Dr. Ellice M. Alger, a well-known ophthalmologist, states, in characterizing modern lighting: "Most of our buildings, both public and private, are glaring examples of extravagant and inefficient lighting, —extravagant and inefficient because they are not comfortable even to sit in."



The lower rim of the lamp shade protects the reader's eyes, but the light falls full on the page



The side wall is a desirable locale for decorative lighting

There is one other form of light-source modification accomplished not by substituting new glassware for old or by the prescribed treatment of colored gelatine film, but it is available only where gas is used. There has been in this industry more progress in realizing and meeting the demand for a "home" light, which by its amber color suggests the comfort of the oil lamp, and makes the atmosphere of the home at least expressive of repose. It is therefore unnecessary for users of gas to apply gelatine film as a light source modifier unless they desire to do so, since the amber-light incandescent gas-mantle, available wherever standard manufacturers' products are sold, gives a delightfully soft and restful effect, most soothing to that neglected and abused human organ—the eye. In creating "atmosphere," however, by combining lighting and decoration, either with gas or electric illuminants, gelatine film, available in all colors, affords a medium productive of irresistibly charming effects.

Having previously alluded to the significance of the side wall as a desirable locale for the art lamp, it is of interest to take up the infinite variety of decorative effects made possible by the inexpensive mode of color modification by gelatine film.

Oftentimes the pink silk candle-shade which one buys under daylight conditions because of its desirable color-contrast for a certain background, when placed in position over its miniature lamp and viewed by transmitted rays of artificial light, with chameleon-like perversity turns white! This little silk shade, which by day blends so charmingly and inconspicuously with its decorative surroundings, becomes offensively predominant and detracts from their beauty by night. To correct this condition it is only necessary to cut a strip of pink gelatine film and insert it in conical form beneath the offending shade. Its own elasticity will hold it in place, and any desired color intensity may be obtained. A delicate pink, for example, can be changed to old rose simply by superimposing several layers of the film, gaining with each layer a deeper color intensity.

Nor is the application of this willing medium restricted to candle shades — for wherever there is a source of light, be it a miniature electric bulb or a "junior" gas mantle, concealed in a decorative urn, or behind a transparency, the gelatine film may be used to produce wonderful effects, creating atmosphere and doing away with every trace of garishness. These decorative touches of light in the home, if well done, are never tiresome, but of great inspiration, turning the subconscious mind from material annoyances to pleasant reveries.

Perhaps the best way to convey some impression of the esthetic possibilities of artificial light will be to transport the reader to a studio equipped by the writer for the conducting of experiments with the view of improving lighting conditions in the average home. The work in this house experiment station has as its fundamental object the presentation of lighting suggestions in practical form, which will enable the average individual to enjoy some of the great benefits and happiness which artificial light can bestow.

The photograph on this page depicts an interior representing in size the average living-room. The lighting fixture shown does not represent any particular manufacturer's product, being of entirely original design, but is typical of a successful method of concealing the light source and at the same time getting a soft diffused light throughout the room. Such fixtures may be adapted to gas or electricity.



A ceiling fixture of this sort accomplishes a general illumination of the room that both brings out details in decoration and is pleasing to the eye. Light is reflected from the ceiling and is diffused through the glassware, but is bright enough to permit reading in any part of the room

Within the art glass bowl of dense Etruscan opal a metal reflector is placed, so as to direct most of the light rays emitted by the source to the ceiling, at such an angle that when re-directed downward by the diffusive action of the ceiling, their direction is such that ocular comfort prevails at every point in the room.

The exterior of this bowl is richly expressive of a Florentine motive, in well-rendered *bas relief*. An amber tint lends to the interior a light which, while of sufficient intensity for all utilitarian purposes, does not emphasize every wrinkle and facial blemish, like the unmodified "white" source, but instead makes the hostess and her guests appear mutually to best advantage.

In reality this interior appears much brighter than is indicated by the photograph, due to the extremely difficult conditions under which it was taken, but it serves admirably to illustrate a method of utilizing a center-ceiling light in a manner entirely

agreeable to one's physiological and esthetic sensibilities. One can read with comfort anywhere in the room, and the source itself can be regarded fixedly without the least squinting, brow-puckering or annoyance. Furthermore, the color of the light from the decorator's standpoint is ideal—suggesting the warmth of the candle, so aptly termed "the sunshine of night." It is a light which in revealing detail in decoration does so gracefully. The harsh gold high lights of picture-frames or braziers are softened, and the cloisonné vase is imbued with an exquisite surface "depth" enhancing its charm to a very great degree.

But even a lighting unit so versatile in its function does not alone meet all the requirements of the living-room. One's imagination is stimulated by variety in any form. Unquestionably lighting which nightly discloses the same placement of pictures and decoration, very much as they appear under well-modulated daylight conditions, weakens in its appeal as does anything which savors of monotony. Quite frequently the light may duplicate the attractions of the open fireplace—

"Where glowing embers through the room
Teach light to counterfeit a gloom."

For such lighting, rich in that depth of shadow, so essential to the pictorial value of an artistic interior, the individual table lamp, as shown in the illustration above, is most appropriate. Bearing in mind that the photograph representing the general lighting of the interior should really appear much brighter, the different effect of table lamp and ceiling light is quite typical.

In looking rapidly from left to right, some idea of the changed appearance of the room may be gained. What actually transpires when one turns out the upper and lights the lower lamp is first, an apparent increase in space relation, and of distance in the room.



On turning out the center light the brightness of the side wall fades, giving an atmosphere of repose and a consequent apparent increase in space. The contrasting effects of the two systems may be obtained by comparing this and the opposite illustration

The brightness of the side wall fades, and is replaced by a mysterious veil of shadow beneath which the walls recede, giving to the illusion a semblance of perspective which is decidedly attractive. Old familiar objects are not quite so recognizable; their subdued aspect adds a new charm, and everything in the room is conducive to repose—if the light is right.

The table lamp shown is one of many types. By virtue of its high pedestal it distributes the light over a wide area. If a longer exposure had been made, the floor would appear as bright as the table top, even to the doorway, and in choosing table lamps it is well to remember this point—the higher the pedestal the wider the area of distributed light. The limitation of pedestal height is indicated by the upper photograph on page 169, showing how the lower portion of the art-glass-rim cuts off the light, so that the reader's eyes are in shadow while the page is adequately lighted.

Some portable lamps are so faulty in construction that the lamps themselves are a constant factor of annoyance to those seated about the table. In such cases it is best to cover the bottom of the large art glass shade with fine linen, stretched by lacing on a wire hoop, which in turn is secured within the shade rim by small wires placed at infrequent intervals. This diffusing screen entirely hides the ugly unfinished mechanism of the lamp and enables a layer of amber film to be placed atop it, obtaining thereby the visual comfort of the oil lamp. Perhaps it may then be necessary to use larger bulbs, consuming a bit more energy, but in such extreme cases it is generally found more economical to pay the difference to the lighting company than to the oculist. And the cost of the extra light is not apt to be great.

(*Continued on page 219*)



THE HUNDRED PER CENT GARDEN



THE SECOND TWENTY PER CENT.—SOLVING THE PLANT FOOD PROBLEM—NATURAL AND ARTIFICIAL MANURES—MOISTURE SAVED BY CULTIVATION

BY F. F. ROCKWELL

NOTE: *Heretofore the home garden has been looked upon by many people as more or less of a hobby, and deserving only as much attention as one usually gives to the pursuit of recreation. That it deserves to be taken up seriously, studied in all its details, and developed to the limit of efficiency, is a new presentation of the subject. How to have the very best garden possible, on a business basis, is the theme of the present articles, which take up carefully and practically one detail after another in natural succession, to the completion of the hundred per cent. garden. The first twenty per cent. dealt with sowing seeds indoors and appeared in February. The third twenty per cent. will deal with the sowing and planting of hardy vegetables.*

FERTILITY of the soil is the secret of success with the crops. This is not to say that a well fertilized garden will necessarily mean that your vegetables and flowers are bound to do well in it; for your neighbor over the fence, who may have been able to afford only half the amount of manure or fertilizer which you use, but who has taken more thorough care of his crops, may be able to outdo you when the results come to be counted. It does mean, however, that if you have put only enough plant food into your soil to produce a fifty per cent. crop no amount of care can make it yield a hundred or even a seventy-five per cent. crop. So the second step to be taken in the direction of that one hundred per cent. garden which we have decided to aim at is to provide an adequately rich and thoroughly prepared soil.



The availability of plant foods depends on careful cultivation

The plant food problem, however, is by no means as simple as it appears at first glance. Science put on its spectacles and after many years of painstaking and careful research, discovered that the growing bean, potato or peanut plant, in order to develop unchecked, and bring its crop to maturity, must derive from the soil a certain fractional part of a pound of this, that and the other chemical elements and compounds. Why not then simply dump enough of these things into the soil to produce a maximum crop and think no more about it. The answer is not so simple as the question, but unless one is willing to give at least a little time and thought to it, he will not be proceeding upon the right track to get the most out of his garden—and as we have already indicated, in these days of the high cost of food-stuffs, the efficient garden is not a matter of pleasure or sentiment alone, but of dollars and cents.

There are three plant foods, or nutritive elements which must be furnished in definitely fixed proportions, if the plants are to attain their maximum possible development. There are several of minor importance, but as these are usually already contained in the soil, in sufficient amount, we need not consider them here. The three nutritive "elements" are nitrogen, phosphoric acid and potash. All soils capable of supporting plant life contain these, but in varying degrees. And that these are what plant life feeds upon is proved by the facts that chemical analysis always finds them in plant growth, and that plants, even trees, have been grown for several generations in water with these plant foods in it.

The first distinction we have to make in plant foods, is that between available and unavailable, that is between foods which contain the elements in such form that the plant may immediately make use of them; and foods which must undergo a change of some sort before the elements in them can be taken up by the plant, assimilated and turned into a healthy growth of foliage, fruit or roots. It is just as possible for plants to starve in a soil abounding in plant food if that food is not in available forms, as it would be for you to go unnourished in the midst of soups and meats, if the latter were packed up in cans which you had no means of opening.

Plants must take up all their nourishment in the form of solutions, and very weak solutions. Their food must be taken through innumerable and microscopic feeding rootlets, or pores, which possess the power of absorbing moisture. Plant food to be available at all must first of all be soluble, and second, the elements in it must be in such forms chemically that the plant can utilize them. Experiments have proved, for instance, that they refuse to take nitrogen in some forms, while in others they accept it readily.

The number and the quality of the meals you will get from

your garden depends on the amount of moisture in the soil.

As all plant foods must be in a soluble form in order to be available for plant use, there must be plenty of water to dissolve the food and carry it up into the plant. Without sufficient moisture in the soil, even though it is crammed full of plant food, and even though this plant food is in the most available forms, the crops will prove a partial or a total failure. This is a fact the importance of which all agriculturists have not yet fully realized. They have insisted upon the necessity of maintaining the "soil mulch," in order to "conserve" the moisture in the soil, thus preventing crop failures. But they have not recognized the still more vital problem of supplying water to the soil by artificial means, when, as is very generally the case, the season's rain-fall is insufficient to produce one hundred per cent. crops. It is often impossible to get good results without irrigation, and this matter, in which such great improvements have been made in the last few years, is of such importance, that it will be taken up more fully in a succeeding article, for it ought to be understood by every gardener.



Good results are won by mixing your own fertilizer. Break the chemicals with a mallet and mix thoroughly

Many people still believe that all one has to do to become a prosperous, up-to-date and scientific farmer, is to go out with a few hundred dollars and buy a run-down New England hillside, send a few shoe-box-fulls of surface soil to the nearest State Experiment Station, to analyze it and tell exactly what it contains, purchase the necessary number of pounds of various agricultural chemicals to make up what the soil is found to lack—and then grow as big crops as can be grown anywhere. This theory was the result of the first scientific investigations of the chemists in the field of agriculture, when it was held that the soil contains within itself some available plant food; that crop chemical analysis would determine the exact amount of the nitrogen, phosphoric acid and potash necessary. Then we should add to the available plant foods already in the soil, just enough more to make the resulting amount equal to the quantities of the various elements used by the crop. Or, in other words, available plant food elements in the soil—plus—available chemical food elements supplied in fertilizers are equivalent to the amounts of food elements found in matured crops.



Here is a soil worked up correctly for absorbing moisture. See how light footprints are sunk in its flaky softness

The discoverers of this pretty theory imagined that agriculture would be revolutionized—reduced to an exact science; and that all former theories of husbandry and tillage would be thrown by the heels together on the scrap heap. They imagined that science had solved at one fell swoop all the world-old problems of agriculture. There was only one thing the matter with this theory—it did not work! The unwelcome but obdurate fact remained that a certain number of pounds of nitrogen, phosphoric acid and potash—about thirty-three in a ton of good manure—would grow bigger crops than would the same number of pounds of the same elements in a bag or two of chemical fertilizers. But while this theory failed as the basis of an exact agricultural science, it was a very big step in the right direction.

As a solution of the problem, however, it was too simple. It did not take all of the facts in the case into account. It was found, for instance, that adding lime or land-plaster—materials that had practically no plant food in them at all—to certain crops, would produce vastly increased yields. This was found to be due to the fact that while such materials as lime did not add any actual plant food to the soil, they did serve the purpose of converting plant food already in the soil, but in unavailable form, into forms that the plant could make use of—to open the cans of food which had been present, but sealed chemically, in such forms that the plant rootlets could not acquire it.

Furthermore it was found that these things had a decided effect upon the *physical* condition of the soil: that they had the paradoxical property of loosening up heavy soils so that water could drain through them more readily; and of binding together light, sandy soils, making them more amenable to cultivation. The physical condition of the soil, in fact, affects the growth of crops very materially, in several ways.

In the first place, while plants must have water, too much is just as harmful as too little. The soil should be in such a condition, therefore, that any surplus of water will drain through it readily. In the second place, the leading root systems of plants must have air, but not too much; without it they will actually smother, and with too much the

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HOW THE ADVENTURER AT ORCHARDING FOUGHT A BAD APPLE YEAR BY HARD WORK AND A PERFECTED SYSTEM OF MANAGEMENT—THE ADVANTAGE OF IDEALS AND OPTIMISM—TRIUMPH OF MODERN METHODS

BY JOHN ANTHONY

Author of "Adventures with an Apple Orchard"

EDITOR'S NOTE.—*Subscribers to* HOUSE & GARDEN *will recollect the account given last year by Mr. Anthony of how he acquired an apple orchard and the success of his first year's efforts. Another season has gone by and again he has conquered further difficulties. The story of this second year takes up new problems of vital interest to* HOUSE & GARDEN *readers.*

FORTY-SEVEN years and one day after they had driven up the hill together, Hiram West and his wife departed with all their belongings. I was left behind in complete possession, but with such a sense of loneliness as I hope I may never feel again. My foreman and myself, strangers in a strange land, were left to work out our own salvation.

And now as I look back on the season's work, remembering the physical toil and the nervous tension of fighting adverse weather conditions for weeks at a stretch, I am impelled to repeat the warning given last year:

"The country offers opportunity to the man who wants to work and work hard; who wants to get up in the morning with the birds and go to bed long after they are at rest; who is ready to fill every minute of the many hours with work and thought and plans. This life is for the man who doesn't like the city because it thwarts him in his wish to work, because it does not give him the chance to develop, to use his energy."

I was busy eighteen hours a day and worried for twenty-four. But from a semi-invalid I have become a strong man and know what it means to live; from a nervous wreck the farm has developed a mentally sound individual. I am happy in the certainty of success and—I am my own boss! And then there is Mrs. John who came into my life at the same time that faith and hope came back.



When winter came on with a chance to look back upon the work, John Anthony felt that his adventures had left him nearer success than ever

But the year was a queer mix-up of success and failure, of certainty for the future and uncertainty for the present. The weather hindered us in spraying, in picking, in shipping. It badly injured the crop in quality and shortened the quantity. And when this fruit, inferior to our usual standard, was sent to market it ran foul of the low prices set by a country-wide bumper crop!

And yet, from the vantage point of these months of perspective, I know that every item of the season's events was for my future good. The weather that only injured my fruit, destroyed that in the uncared for orchards in the neighborhood, thus opening wide a market hitherto unthought of. For a portion of my crop this local outlet is the most profitable possible, as there is no commission, freight or package charge against it. The lack of sunshine taught me more about pruning than a dozen years of favorable conditions could have done, while even the shortened crop was of advantage, for it gave me a light season to get my organization into smooth running order in the anticipation of heavier ones. Last year I had the apples but not the system. This year I had the system but not the apples. Such apples as we had were handled to the queen's taste, no mangling and bruising as in the former times.

Another season we will have both apples and system, and when that time comes—be it one, two, or three years away—we will come into our own.

With the departure of the Wests, David and I were left alone on the place. There was work in the orchard for four men, but we did it without help and kept house besides. I wish that I could give some idea of the fun of that season of long hours. We lived literally on the fat of the land, and however long and hard were the hours of work out of doors, we did not let them interfere with the culinary department. The Jersey cow gave the best of milk and we had an abundance of the richest cream that I have ever seen. Cream, butter and cheese, fresh eggs, potatoes, apples and winter vegetables from the farm, cereals and breads from the store gave us a table that would lure an epicure away from the creations of a chef. Both David and I could cook and cook well. We had the food of the country with the seasoning and service of the city, for from a certain standard we never lapsed. Our housekeeping was famed abroad. The occasional visitor from the city we expected to impress, but it came as a surprise to have the country folk become enthusiastic. Men went home and asked their wives to come to us to learn how to make corn bread and cream cheese, to bake puffs and molasses cake. It was not alone that these things were good, the real joy came because we were doing it all ourselves. The food was almost entirely from the farm itself, and we old campers knew how to do the preparing. We were as independent as man may be in this day of organization. We were happy and contented, and in some subtle way this feeling spread to every creature on the place. The cow, from a wild-eyed animal, began to follow us around like a pet poodle until it became difficult to drive her into the stable yard so unafraid was she. The chickens tamed down until one could hardly walk on their premises, while Jericho was more an affectionate friend than a beast of burden. Later, even the pigs learned to let the small child ride on their backs.



My idea was to do the heavy trimming on alternate seasons before the off bearing year, and light thinning of the interlacing branches during the years of fruiting

Pruning was the first big job, and in many ways the hardest, for it would take a tree so many years to outgrow a serious error in that work. Much of it we had done the fall before as soon as the apples had all been shipped, but a good many days' work remained for David and me. When at last we were through, the orchard was well-nigh impassable, for brush covered the ground three feet deep. Tall trees had been lowered from one to three yards, thick-topped ones had been opened out to light and air and interlacing limbs had been removed. Neighbors called us crazy and said we had ruined the orchard, but the apple expert of the Department of Agriculture spoke such words of praise as make me feel a glow of pride to-day, and after watching the trees for the year, I know that we could have carried the thinning process a little further with good results. In general my idea is to do the heavy trimming on alternate seasons before the off-bearing year, and the light thinning out of interlacing small branches the years of fruiting. This will interfere less with the crop producing of the trees, and in three or four years will put them in shape. Also, it gives me an opportunity to watch the result of the work during the year of bearing and to judge how to pursue the pruning. Much of the credit for this work belongs to Mann, for his ideas controlled. These ideas he got from books, a little practice and a winter's course at Hope Agricultural College. His work received such commendation from high authority that evidently he tackled the job from the right angle. Each individual apple must receive light and air, and to reach this condition trees must be pruned, not forgetting that too radical work will upset the balance between root and top. But finishing the work on the trees was only half the contract. Every scrap of the brush had to be hauled away and burned. It was a seemingly endless piece of work. Day after day we toiled at it. Section by section the orchard became passable, but men and horse were tired of the thought of brush before the last piece was in ashes.

The spraying of the orchard was without one redeeming feature of fun save the pleasure of thinking of a necessary piece of work well done. The radical mistake that I made was in thinking the old-fashioned pump of Hiram's regime was of the slightest use for modern spraying. We did the work with it, but there is a row of gravestones up on the hilltop to mark the number of men who died at the job. It was a grueling contest, and only David and I lasted out the season at it. Mann, at first scornful of our progress, retired after two days, forgetting his scorn and thinking only of blistered hands and aching back. The pump was intended for the old-time pressure of fifty pounds or so, but we had a gauge staring us in the face and we kept the pointer between one and two hundred pounds! The toil was incredible, but the success of the work was qualified only by an exceptional season. We routed the bugs and the fungus until

they were a negligible factor, but we covered ourselves and our clothes with the lime-sulphur solution. The lime ate into the flesh and made ragged wounds of small cuts, the sulphur clung to our hands until we darkened the table utensils, and the housekeeper kept silver hidden and made us eat with iron forks and knives. There were days when the rain washed the solution off the trees as fast as we could put it on, but time was pressing and we sprayed rain or shine. Hiram had tied his barrel of spray on a wagon and hauled it through the orchard with momentary chance of upsetting the whole outfit on a hillside. He had filled the barrel from the horse trough with a pail. I put a hogshead on a platform six feet high and led the pipe from the spring into it. From the bottom of the hogshead a big hose could be led to the spray barrel and that filled in a moment by force of gravity. The truck for mounting it was made by the local genius of the town, to whom I described my needs. He took two old mowing machine wheels and lengthened the axle until the tread was five feet wide. He made a stout framework of wood in the form of an isosceles triangle, with sides five feet long. One of these sides was bolted on top of the mowing machine axle, while the opposite apex was fitted with an iron through which the king bolt of the farm wagon could go, thus allowing the use of the forward wheels of the wagon in connection with the mowing machine wheels. Iron straps from the triangle supported a platform a foot beneath it on which the barrel rested. An iron rod on each side was hooked over the top of the barrel and secured to the triangle with a nut. This held it immovably in place while the center of gravity was so low that it could safely be taken on the steepest hillside of the orchard.



From the vantage point of these months of perspective I know that the orchard is better prepared to produce another year than any of those carelessly tended ones in the neighborhood

Day after day Jericho hauled this apparatus around the orchard, day after day we toiled at the pump until every blossom and every leaf of every tree had been drenched with the spray. We scarcely finished one round before it was time to begin the next one, for with two leads of hose it took us ten days to go over all the trees. But it was this thorough work that saved the crop, for the bugs and fungus destroyed that of every other orchard in the county.

The story of the year is one of driving, hard work for long hours; of plans arranged to utilize every minute of time whatever the weather; and of records broken for results. The new orchard of young trees is the best exhibit of this care and hard work. We set out 498 young trees, and at the end of the season 496 were alive and well. A local laborer was hired to dig holes for the planting. Fifty holes the first day finished him and he went home at night "sick." David and I tackled the job. Working together, we dug one hundred in four hours. When the trees arrived the holes were ready for them. In this locality young trees are never sprayed. Every other morning, before breakfast, I patrolled the long lines of young hopefuls, caught the caterpillars before they had done any damage and called the spray wagon into action. Again the caterpillars (of another variety) were repelled soon enough to prevent damage. A third time the spray wagon went over the trees to stop the attack of the aphis. Deer were frightened off, after a raid or two, by an ounce of sulphur sprinkled about each tree. The ground was cultivated, the weeds kept down, and the bugs kept off by this sort of eternal vigilance. We took no chances, allowed no precedents to lure us to a sense of safety, but watched those trees day by day. On another hilltop, not far away, other trees from the same nursery were planted at the same time. The owner of them knows more about apple tree culture than I do, but he likes to sleep late in the morning and to drive down for the mail behind a fast horse. The weeds, the bugs and the deer got up as early on his hilltop as they did on mine and—they had a better time. His trees were devoured by pests and hidden by the weeds; mine out-grew all expectations and are one of the wonders of the country side.

The harvest season was one long time of doubt and trial. Last year, with Hiram at the helm, every condition had been ideal, and it had seemed like a simple proposition, but now, left by myself, nothing went right. Lack of sunshine had prevented the apples from attaining their usual size and color. It was impossible to pick them uncolored, and it daily became impossible to leave them longer on the trees for fear of a freeze. Hiram had picked the red apples first last year, leaving the green varieties until the last. I knew no better and waited in the hope of sunshine and color, leaving all the fruit on the trees. I was near despair and had about determined to pick, color or no color, when, one day, Mr. West came driving up the hill! Then he suggested the obvious thing—that which has already occured to you—to pick the green varieties at once, risking the red ones on the chance of the long overdue sunshine. We had had intermittent rain for a month or more, but Hiram assured me that I could definitely count on clear weather throughout October for picking. They "always

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Often a commonplace spot can be rendered unusually distinctive by the artistic placing of the tub plant. This illustration shows in a marked degree how a single palm has added dignity to the grounds

Ornamental Tub Plants

THEIR GROWING POPULARITY FOR DECORATIVE PURPOSES—FORMAL AND INFORMAL EFFECTS AND HOW TO ATTAIN THEM—VARIOUS ATTRACTIVE FLOWERING PLANTS AND WHERE THEY SHOULD BE GROWN

BY IDA D. BENNETT

THE use of ornamental tub plants for terraces, porches and like places is steadily growing in favor, and one sees them in almost every position where the ornamental plant is feasible. To mark the end of a walk, the intersection of garden paths, the opening in a fence or hedge or a house entrance, a plant which is ornamental in foliage or flower is always desirable. Often a commonplace front door is dignified and made attractive by potted plants at the ends of the steps; but in selecting plants for such positions a certain reserve should be shown and anything fussy or untidy in appearance avoided. I have seen entrances quite spoiled by ineffective plants in fancy pots or jardinières. As a rule the more simple the receptacle in which plants for ornamental purposes are grown, the better. For such large plants as boxwood and bay trees the ordinary cedar tubs are best, and for many smaller sorts the large, red pots—not the ordinary florists' pots but the terracotta ware in plain surface but graceful form, is excellent. Some of the Mexican pottery does very well if care is taken to select as inconspicuous a design as possible, for it is the plant, not the pot, that is the motive of the decoration.

For gardens and houses of formal character the box and bay are usually selected, and where these are prohibitive in price a very good substitute is found in some of the small, neat-growing evergreens like the Japan cypress. The junipers may also be used and some of the cedars, which are both dignified and ornamental.



The *clivia* produces exquisite umbels of bright flowers



Callistemon lanceolatus likewise has beautiful color

For less formal effects where only good foliage is sought, some of the bamboos are desirable. *Bambusa Metake* is one of the most useful forms for potting, being dwarf in habit and rarely exceeding six feet in height. As it bears the largest leaves of all the bamboos, it makes a very attractive and effective plant. It needs considerable water and rich soil always to be at its best, but is not as exacting as palms, and makes an excellent plant for indoor decoration in winter. *B. viridiflora* is another attractive bamboo requiring the same gener-

al conditions as *B. Metake*. Both are worth the care required.

For positions where a plant of medium size can be used, there is nothing better than the aspidistra, with its large, leathery leaves that remain in perfection for years. The aspidistra has one peculiarity, however, which should be observed—a dislike to being moved around. As far as possible, it should occupy the same position from day to day. A little shade during the hottest part of the day is necessary, as too hot a sun will discolor the leaves; the plant seldom needs repotting, but the loose earth about the top of the pot should be shaken out in the spring and fresh earth supplied, to which a little bone meal has been added.



The *Agave Victoriae-Reginae* is stemless and sometimes has 200 leaves

There are many places, however, where a formal green plant is not sufficient, where one desires color as well as form and where blooming plants are more satisfactory. Fortunately the supply of such suitable plants is large, and one may gratify his predilection for almost any color or tint. One of the really fine things where a blooming shrub is desired, is the Chinese hibiscus, which comes in varying shades of pink, red, and yellow. The foliage is exceedingly handsome, being large, waxy and of a fine gloss. *H. Miniatus semi-plenus* is to my mind the finest form, the flowers being a brilliant vermillion four to five inches in diameter and semi-double. They never fail to attract attention, and when used for corsage wear—for which purpose they are excellent—it is no unusual thing to be stopped on the streets by utter strangers, who ask you what that beautiful flower is.

The peachblow variety is also very good, being, as its name indicates, a delicate peachblow pink, which is stronger and better in full sunshine than in partial shade. There is also a pure double salmon flower and some orange shades, together with many single flowers of immense size.

The plants are easily cared for, but require plenty of root room, rich soil, which may be partly marsh earth, and an abundant supply of water during the growing season. They do rather better in pots than when grown in the open ground, as there they are inclined to go too much to foliage. The flower of the hibiscus lasts but a single day, but as flower succeeds flower in rapid succession, this fact is scarcely apparent except to the gardener. The hibiscus may be wintered in a frost-proof cellar, but a cold, damp one is likely to prove fatal to it. It may also be kept growing and blooming in a warm conservatory or greenhouse if desired.



The pyramidal box, like the bay tree, is suited to formal gardens

The various oleanders are not as much cultivated in the north as they should be, as they are fine in every way, abundant in foliage, attractive in growth and exceedingly beautiful in flower. Almost everyone is familiar with the old, double form of the oleander, but the dark reds, whites and single pinks are less widely known. The oleanders are of easy culture, and the plants last for years. As they increase in size and beauty from year to year, they should receive more attention than is given to them.

The various pot hydrangeas are more in evidence, and well deserve the popularity accorded them. Empress Eugenie—the old favorite with its pale pink flowers, is the best known of the sorts. Otaksa—another pink form, and Thomas Hogg, a pure white type, are the principal varieties, but to this list may be added a blue form by the simple trick of adding certain chemicals to the soil in which the plants are grown, a

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The flesh-colored *justicia carnea* needs rich soil for development



The *punica granatum* pomegranate blooms winter and summer when in the conservatory



The *Ismene* is attractive and is extensively cultivated

The Hospitable Guest-Room

SUGGESTIONS FOR FURNISHING ONE ROOM SET APART FOR THE ENTERTAINMENT OF GUESTS—HINTS THAT LEND COMFORT AND CONVENIENCE—SOME AUXILIARIES NOT TO BE NEGLECTED

BY ABBOT MCCLURE AND HAROLD DONALDSON EBERLEIN

Photographs by P. B. Wallace

"AND yours, my friend!" Such are the simple words of welcome carved above the house-door of a small country seat near a certain village in a certain county in England—the precise location counts not. What does count a very great deal is that the master of the house has voiced with few words and genuine sincerity the chief principle of true hospitality to all that chance to share the shelter of his roof—the house and all its resources are at his visitors' disposal to make them comfortable and happy during their stay.

To live up consistently to this principle of seeking the guest's comfort and happiness it is obviously of the first importance that the appointment of the guest-chamber, where he or she may be quartered, should be a matter of thoughtful care. It is astonishing how many guest-chambers fall far short of the mark and that too, in houses otherwise well furnished. They are painfully unattractive, and at a glance it is evident that little if any attention has been paid the thousand and one little things that aid in making a visitor's stay most agreeable.



The guest-room should be adaptable to more purposes than sleeping. This sitting-room corner with its desk is a desirable feature

Proper equipment of the guest-chamber need not be a matter of great expense, but it must be a matter of careful consideration. After all it is the provision of little accessories that will count most, just as it is the little acts of courtesy and thoughtfulness habitually occurring that go to make the charm of a well bred person's manner. So then, since the good hostess in furnishing a guest-chamber will in every way try to promote the guest's comfort and convenience as an earnest of his welcome—if he be not welcome the disposal of his quarters must depend upon the conscience, manners and diplomacy of the hostess—let us view the question first on the score of material requisites, and secondly with regard to such arrangement as will most conduce to attractiveness and cheer.

At the outset it should really go without saying that the guest-chamber or chambers ought to be so placed in relation to the other bedrooms that guests in their goings and comings may be as far as possible independent of the movements of the family. It will be much pleasanter for all concerned and save some awkward positions. Likewise in settling the location of guest-chambers it should be carefully seen to that they are out of sight, sound and smell of the service end of the house. It is not considerate nor in good taste to afflict the eyes or ears of one's visitors with selected glimpses and strains from the domestic workings of the establishment, neither is it desirable to advertise several hours beforehand what's a-cooking for dinner.

Nothing can be more important in fixing the position of guest-chambers than convenient access to a bathroom quite separate from those in constant use by members of the family. It is always extremely uncomfortable for guests to be obliged to use family bathrooms. When they go for their bath in the morning they have the annoying feeling that they may be encroaching upon the master's or mistress's accustomed time of bathing or else from their bedroom door they must maintain a circumspect lookout to see when the coast is clear. On the other hand it is unpleasant for the family to feel all during their ablutions that perhaps they are keeping their guests waiting. In all well arranged houses, therefore, separate bathrooms will be provided for guest-chambers. In cases where this may be impossible, however, the guest-chamber should be so placed that the unfortunate guest will not have to run a perfect gauntlet of doors before reaching the particular one he seeks. In houses where much entertaining is done it is almost indispensable to have a maid's room adjoining the guest-chamber.

As to the furniture contents of the guest-chamber, while observing a rule of simplicity as far as practicable, there are certain considerations that are absolutely imperative. In the first place it is well to have two single beds or, if there is only one let it be of full size. Single beds, however, are preferable, and as the taste of many persons varies in the matter of sleeping arrangements, the mattresses should be neither extremely hard nor soft, striking a medium between the two that will adapt itself to the needs of the average visitor. Between the heads of the beds there should be a small table for candles, pitcher and telephone. It is well for this table to have a shelf or shelves beneath. It is often desirable, especially where there is only one bed, to have two tables, one on each side. There is then plenty of room for candles, tumbler and pitcher, or better still, a thermos bottle on one side and telephone with directory and pads on the other. It is thoughtful to provide a list, if in the city, of the principal shops, theaters and so on, including also the family physician's number. By the bedside there should be nice, warm, soft rugs, and the comforters ought to be of silk and light in weight.

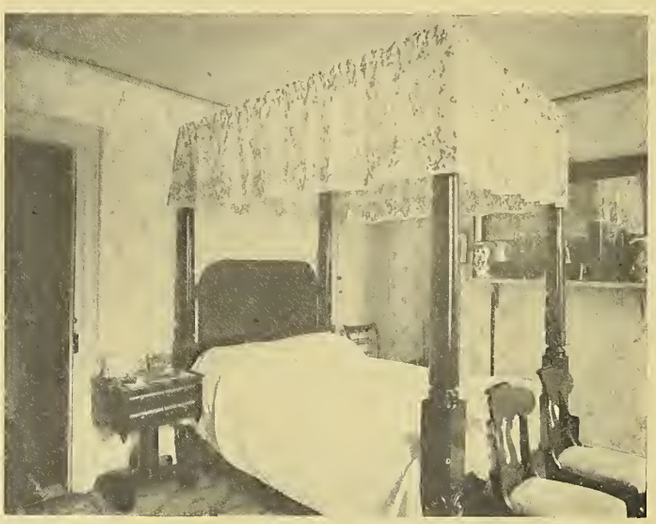
If the house is equipped with electricity there ought to be a light with a cord of adjustable length over the middle of the bed head for reading in bed. While speaking of lighting, hints about several appliances seem necessary from the general lack of attention in several respects. For one thing, there ought to be a drop light over the dresser or bureau and it ought to be adjustable and have a shade to throw the light down. There ought also to be adjustable lights at the side. With the light, or rather lack of



There are many conveniences worth while in this attractive bedroom with its twin beds. The table between the bedsteads supports a telephone and a reading lamp, and space for books. The switch for the light may be reached from the bed

light, sometimes found it is hard enough for men to brush their hair, and much more difficult for women to do their own. In addition light for shaving should also be provided either in the bedroom or bathroom, preferably the latter.

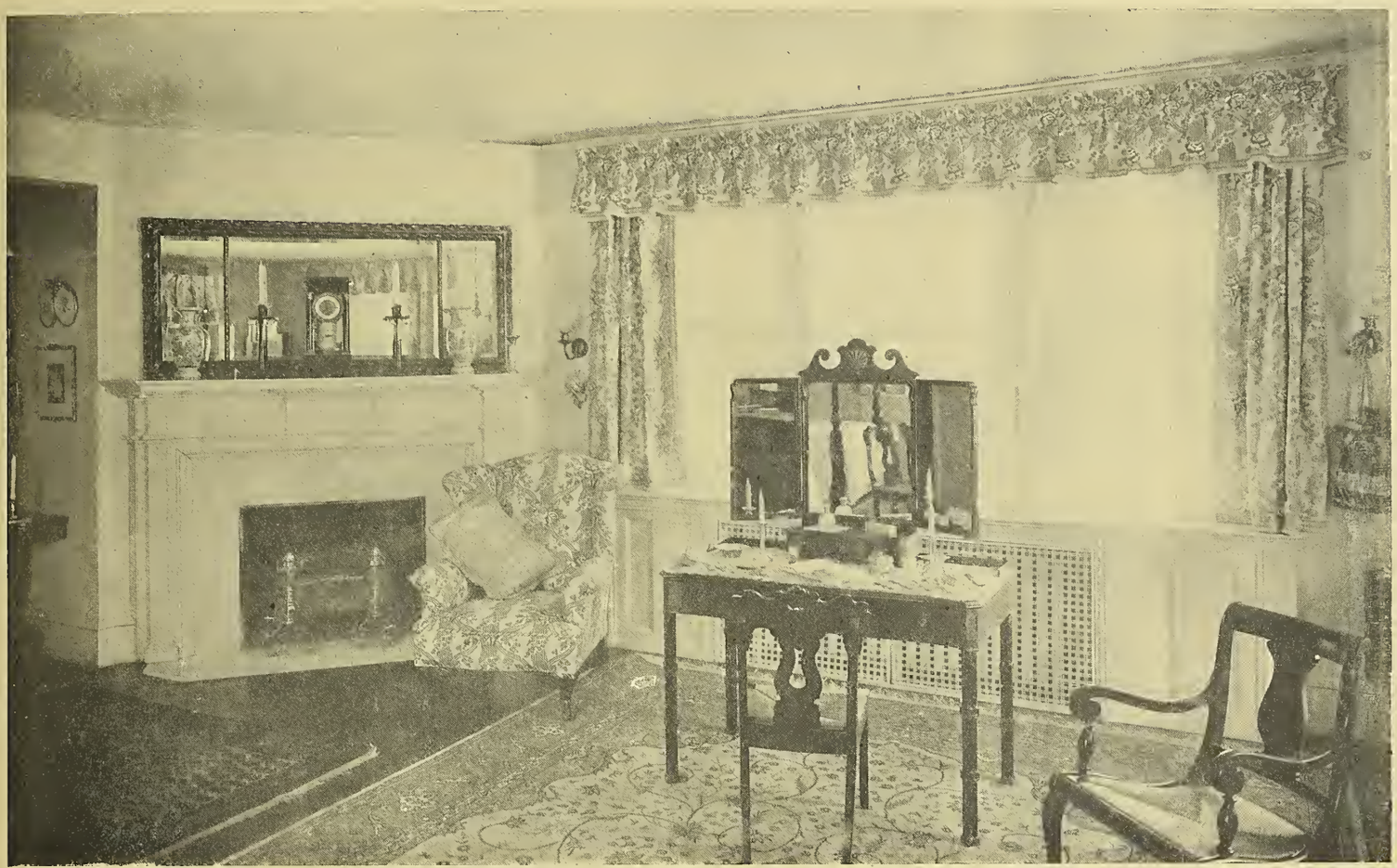
In this connection it is well to add that all mirrors should be so placed or hung that one can get a good light in them. The writers know of one handsomely furnished apartment where all the mirrors are so unfortunately placed that it is impossible to get sufficient light in any of them, and anyone who attempts to shave by their aid is very apt to look afterwards as though he had been through a German students' duel. A dresser with a mirror in three parts is desirable, the two end sections being hinged and adjustable. Then, too, there ought to be a pier or cheval glass, and it is an excellent idea to have a full length mirror set on the inside of the closet door. In fact such a mirror may take the place of a cheval glass, although one ought to be provided if possible.



The four-poster is suggestive of comfort. The two chairs at its foot serve in lieu of a lounge

A good variety of dresser or dressing table is somewhat concave in front, so that anyone seated before it may have the various drawers and compartments readily accessible on either hand. Presuming that the guest-chamber is to be used sometimes for women and sometimes for men, it is necessary to have a bureau or chiffonier as well as a ladies' dresser. Besides these there should be an ample chest of drawers so that there may be an abundance of room for the bestowal of clothing. In bureau, chest and dresser the hostess should look to it that the drawers run easily and do not stick. It is a good plan to have glass plates to put on the tops of both bureau and dresser. In the first place they are clean and easily kept so, and in the second, as far as the guest is concerned, he or she doesn't like to feel that a bottle of alcohol or cologne or what not may be spilled or leave a mark on a cover or on the woodwork.

It is an excellent idea to have the inside of the drawers in the ladies' dresser painted white and enameled. This gives a wholesome appearance and aids in the removal of any dust that may collect there. The paint should be laid on carefully, however, and the enamel surface be perfectly smooth, with no tendency to stickiness, or the work will be worse than useless. Somewhere, in bureau, chest, closet or table there ought without fail to be a handy drawer containing needles, thread, buttons, mucilage, stickers, string, wrapping paper and a thousand and one other



The comfortable armchair before the fireplace and the well equipped dressing table with its good form of mirror will be appreciated by guests. There is an interesting treatment of the radiator that suggests a successful way of hiding this ugly feature

odds and ends that anyone is apt to want at any time but will very often do without altogether rather than put a hostess to the bother of getting for them.

Another piece of furniture that should always be included in the equipment of a guest-chamber is a table desk provided with stationery both marked and plain and all the necessary writing paraphernalia. A reasonable supply of postage stamps ought not to be forgotten. It is well to include telegram blanks in the list of things desirable, for a man while visiting has often to attend to important business concerns at the same time and greatly appreciates all such facilities. A waste-basket is also necessary. Details in the preparation of the guest-room are not of the greatest importance, but scrupulous care in even the smallest trifles will add to the welcome of the visitor and show him that some thought has been taken in his behalf. And there are many occasions when such trifles become of the highest importance. No omission is excusable that may cause the guest a moment's annoyance.



A very simple bedroom, but one planned with various guest-room conveniences

Either on one end of the table desk, if it is large enough, or better still, on a separate table, there should be a reasonable number of books—novels of the day, classics, semi-classics—to suit all tastes and needs. It is well, likewise, to have some magazines—not a year old—in the same place. A comfortable reading lamp will, of course, accompany this outfit. The appropriate reading lamp leads one on to a reminder about easy chairs, of which there should be more than one. On the reading table or on the table desk it is a graceful attention, if the guest be a lady, to have a bowl of flowers. They breathe a welcome in a way that nothing else can. Your men guests will always be pleased to find a box of cigarettes on desk or table, and forget not at the same time to have ash-trays. Ash-trays of glass or some washable material are preferable to metal or substance that will either tarnish or stain.

There ought either to be a hat and boot cabinet of some kind or else some special provision should be made for them in the closet. A lounge or reclining couch is also a desirable adjunct to the furniture of a guest-room, and can often very fittingly be placed at the foot of the bed. When it is not placed there it is a good idea to have a slatted trunk rack or stand set there for the arriving guest's trunk so that it may be easily unpacked without uncom-

(*Continued on page* 203)

The Proper Use of Dwarf and Standard Fruit Trees

THE MOST FITTING SITUATION FOR EACH SORT — ESPALIER FRUITS AND HOW TO TRAIN THEM — COMPLETE INSTRUCTIONS FOR STARTING A FRUIT GARDEN

BY F. F. ROCKWELL

WITHOUT enthusiasts the world would never have progressed; and in no line of work is this more true than in horticulture. Nevertheless, it is a fact that the enthusiast is likely to look upon things from one side only, and some of the dwarf fruit enthusiasts have been no exception to this rule. While I believe that the dwarf fruit has come to stay—has, in fact, been the result of an actual economic demand—still I think that in a few instances people have been misled as to the result they would obtain from it, not intentionally on the part of their informers, but because, hearing only one side of the case, they have failed to take all the necessary precautions, and have met indifferent success, or even failure as a result. It is my purpose in this article to present both sides of the subject, and I hold no brief for either. I do not believe, on the one hand, that dwarf fruit trees are going to supplant the standard kinds with which most of us are familiar, nor, on the other, that they are but a hobby, doomed to oblivion after a few years' experimenting on the part of the general public.

First of all we had better get a few definitions straightened out so as to know exactly what we are speaking about. What is a dwarf fruit tree? Our definition has to be largely a matter of comparison. When you recollect those rugged, shaggy-barked old patriarchs of the apple orchards of your childhood, spreading their twisted limbs almost fifteen feet upward and outward, the neat rows of trimmed, compact low-headed trees of the modern commercial orchard seem in comparison quite dwarf indeed. You can actually pick some of the fruit from the ground. But when some enthusiastic suburbanite friend takes you into his fifteen by twenty foot fruit farm at the back of the house and shows you apples and pear trees the topmost fruit of which you can pick without standing on tip-toe, then you realize that your definition of "dwarf fruit" has to be readjusted, for the actual fruits on these miniature specimens of apple and pear trees are fully equal in size, coloring and flavor to those grown upon the full-sized standards with which you are more familiar. As a matter of fact they are the same apples and pears which you already know, the difference being that now they are growing on another tree: that is, slips of the standard varieties are grafted upon a dwarf, slow-growing stock, and the result is that you can have dwarf fruit trees without dwarf fruits. This achievement, from the point of view of the horticulturist, is not nearly so wonderful as it probably will seem to you when you behold for the first time one of these specimens of the skill of the nurseryman.



Standard trees surpass the dwarf varieties where there is plenty of orchard space for branching and room for the proper development of the roots

In fact, for any definite discussion of the subject, we should have a more extended classification. For instance, *standards, low-headed standards, semi-dwarfs,* and *dwarfs* would enable us to be more accurate in describing the various types that are adapted for various purposes. The difference between standards and low-headed standards is a matter of training. That is, the main branch is cut back sooner than was formerly the practice, thus inducing the growth of the spreading side limbs at a point a great deal lower down on the trunk of the tree. Some varieties are naturally much smaller than others. In fact, it is simply by taking advantage of extreme cases of this characteristic that the dwarf trees have been made possible. The semi-dwarf trees are made by grafting the standard varieties upon what is called a "Doucin stock," that is simply a variety of apple which normally attains a height of eighteen feet or so. For dwarf trees, standard varieties which have been found suitable for the purpose, are grafted upon Paradise stock, which is a wild, small, fruited English variety. In addition to this the method and thoroughness used in training and pruning will affect to a considerable extent the shape and size of the tree produced.

The dwarf fruit trees are not, except in the opinion of a few enthusiasts, considered as substitutes for the standard types. They can, however, be used where the others can not, and therefore it depends upon the circumstances in each particular case, whether or no their use will prove profitable. I do not use "profitable" in the commercial sense, but to indicate whether the

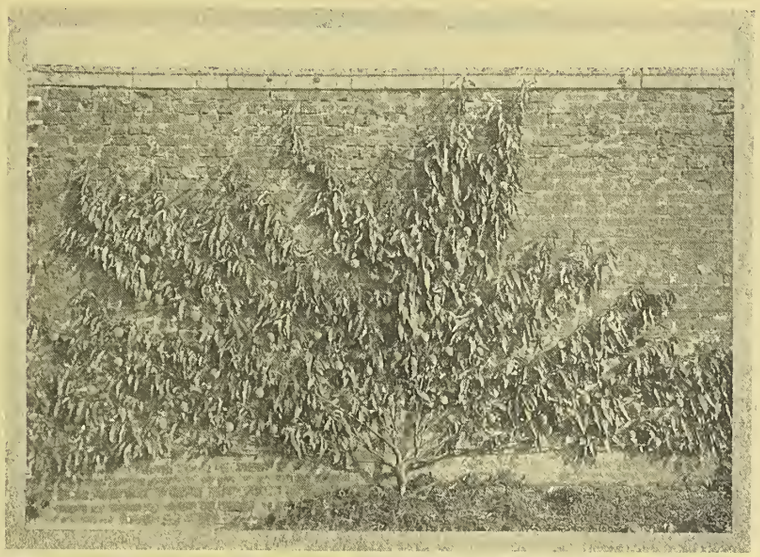
results will prove satisfactory to the person who plants the dwarf trees, considering the amount of time and care which has been expended.

The greatest advantage of dwarf fruit trees is the fact that they can be grown where there would not be room for standard types. Standard trees, for instance, are set thirty-five to forty feet apart. Doucin stock apples can be set within fifteen to twenty feet of each other, and Paradise stock apples as close as ten or even eight feet. Not only can three to five small trees be set where one or two standards would occupy the same amount of room, but they can, if conditions require it, be trained to a trellis along the boundary of the grounds, so that their growth is almost entirely lateral. It often happens, too, that while there might be enough ground room for a standard tree, the height would be objectionable. And here again, of course, the dwarf trees furnish a practical solution to the problem.



A good example of how space has been saved and the entire garden made attractive by training dwarf fruits symmetrically on the garden fence

Another point in their favor which is of almost equal importance to the man who desires to grow his own fruit on a small scale, is the fact that these small trees are so easily cared for and so efficiently attended to in the matter of spraying, pruning, thinning the fruit, etc. With no power except his two arms, he can care for his dwarf trees quite as thoroughly as the commercial orchardist can tend his acres, with a power spray-pump and all the other requisite apparatus.



The dwarf peach tree does well on the brick wall if properly trained on wires to direct its growth

Still another very decided advantage of dwarf trees is that as both branches and root-system are so restricted in the area they cover, other things may be grown between the dwarf trees much more successfully than between standard trees, whose dense shade and root systems spread even beyond the limit of their far-reaching branches. This is a very important point, especially where the situation in the plot of ground is such that it becomes desirable to set some fruit trees along the southern or eastern boundaries, as anyone who has had to choose between cutting down a good tree or being satisfied with the indifferent results obtained from vegetables struggling along in its shade and fighting against the encroachment of its robber roots, will fully appreciate. Here the dwarf wins.

Still again there is perhaps that less important but nevertheless extremely alluring fact that with dwarf fruit trees at least a fruit or two may be expected even the first year after planting—while with the standards a most patient, trying period of five or six years must be put up with before the result of one's long continued labor may be finally had in hand and actually tasted. This prospect of almost immediate returns certainly is a very powerful incentive to the planting and care of fruit trees as far as the amateur is concerned.

And then there is the beauty of the dwarf trees in bloom! That alone, to anyone who loves flowers, is worth the extra care they may require. It may be because the flowers are nearer, and on a level with the eye; it may be because the effect is unexpected and novel, but a dwarf pear or apple in bloom is even more beautiful than one of standard size.

While none of these claims in favor of the dwarf tree is exaggerated, it would, nevertheless, give a somewhat one-sided view of the value of dwarf fruits if no mention were made of their several serious faults. In the first place their yield is very small, being, even after they are in full bearing, only from a quarter of a bushel to a bushel, to an average-sized tree. An average standard tree will easily bear four or five times this amount—and therefore, one of the apparent benefits of the saving of space effected by the dwarf trees is found in reality to be deceiving.

Then there is the question of culture. As a general rule, the more artificial the products of the nurseryman or the plant grower the more careful is the cultural attention demanded. And these dwarf fruits, growing on alien roots, are no exception to the rule. Not only must the ground in which they are planted be in excellent condition, but the after care and cultivation must be constant and the best, or the experiment will be certain to prove more or less of a failure—probably more! The trunk and root system do not become as firmly fixed in the soil as do those of standard type and are therefore more subject to injury from external sources. In fact, a standard tree will live and make a fairly satisfactory growth—provided it is kept clean by spray-

ing—under conditions which would be likely to prove fatal to a dwarf form of the same variety. Last, but not least, there is the question of cost—and this is not limited to the original cost, which at present is from five to twenty-five times more than that of standard stock. Also, as far as present indications go, most of the standard varieties would outlive two or three plantings of the dwarf stock, at least in our hot, dry climate. Abroad where rainy, cloudy weather is much more frequently encountered than here, there may not be so much difference. It is abroad that the dwarf fruits have been developed and are still much more widely used than here.

So there are at least two sides of the question for anyone contemplating the planting of fruit trees, and he will do well carefully to consider the conditions which surround his own particular problem, before making up his mind that either dwarfs or standards are to be unconditionally declared the better, even for private use.

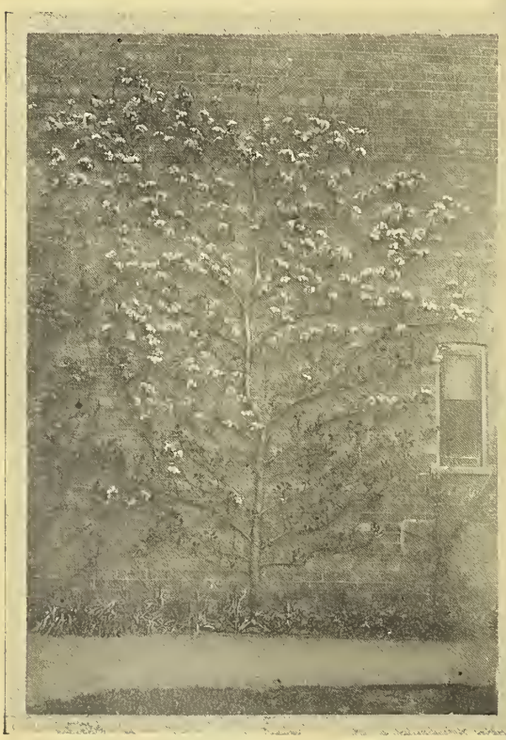


Training the dwarf fruit on the wooden fence is almost as easy as training the rambler rose

The fact is that the dwarf fruit tree offers a solution, and a very advantageous solution, to those who would otherwise go without fruit of their own at all. Its stronghold will be the suburban garden and the grounds of the small place. There the amateur and the enthusiast will be glad to give the careful attention which they require, in return for apples, pears and peaches in variety, and of the first quality, which they will begin to yield him, not only after several years of "fruitless" labor, but almost immediately. It should not be forgotten, however, that as far as quantity of production is concerned, the larger trees will probably give far better satisfaction. The superior quality of fruit from dwarf trees which one frequently reads or hears about is, I believe, largely fictitious; that is, it is due not to the fact that it was grown on dwarf trees, but that the trees themselves were given better care than standard trees ordinarily receive from the hands of the average fruit grower.

There is another point to which I have never seen attention called in discussions of dwarf fruits, and that is the possibility of having several varieties of apples or pears upon one standard tree. We have an old but still very medium sized Pearmain tree in our orchard, which bears more summer apples than we can ever use, a good number of Hubbardsons for autumn use, and Rhode Island Greenings for winter. Why should not some enterprising nurseryman make a point of supplying several varieties of apples grafted on a suitable stock to afford dessert fruit at least through the season in gardens where there is not room for more than two or three fair-sized trees? Of course such stock would have to be larger and older than the usual sizes sent out, and it also would be much more expensive, but it seems to me that there would be many people who would be willing to pay a very good price for the combination tree of this sort. There is also, of course, the possibility of having a combination of the larger size and the dwarf trees, using, perhaps two or three of the former for

(*Continued on page* 205)



One upright and two lateral shoots should be trained along each wire as the tree grows



The dwarf plum tree on the lawn rivals the flowering shrub in its beauty



Small space brings large results by training dwarf trees to the wall as is shown here

EQUIPPING THE KITCHEN



A shallow alcove designed for the range and lined with tile or brick saves space in the small kitchen and does away with smoke and cooking odors

HOW TO PLAN AND BUILD—STRUCTURAL INNOVATIONS—ADJOINING ROOMS AND THE LOCATION OF FIXTURES—UTENSILS, SANITATION, LIGHTING AND EFFICIENCY

BY LOUISE SHRIMPTON

Photographs by George Doust

TO use the kitchen simply as a cook room and scullery, a place where food is prepared and pots and kettles are scoured, is the modern aim. All tramping through the room by service men or family is avoided. If possible a rear hallway provides a line of travel for the household. A cool room opening from a rear entry contains the refrigerator and a place for depositing groceries. The laundry tubs, once placed in the small house kitchen, are now on the cellar floor, where a well-lighted laundry often includes provision for ironing as well as washing. On the cellar floor of the well-appointed house is also a preserve room, with double walls containing an air space, and a similarly built vegetable room.

In the kitchen itself modern ideas as to efficiency are receiving due attention. The careful home-builder contrives a plan that shall eliminate futile effort in walking and unnecessary gymnastics in gathering utensils and materials together for cooking.

Kitchens of a few years ago were notoriously dark and unsanitary. Today the kitchen is well ventilated and

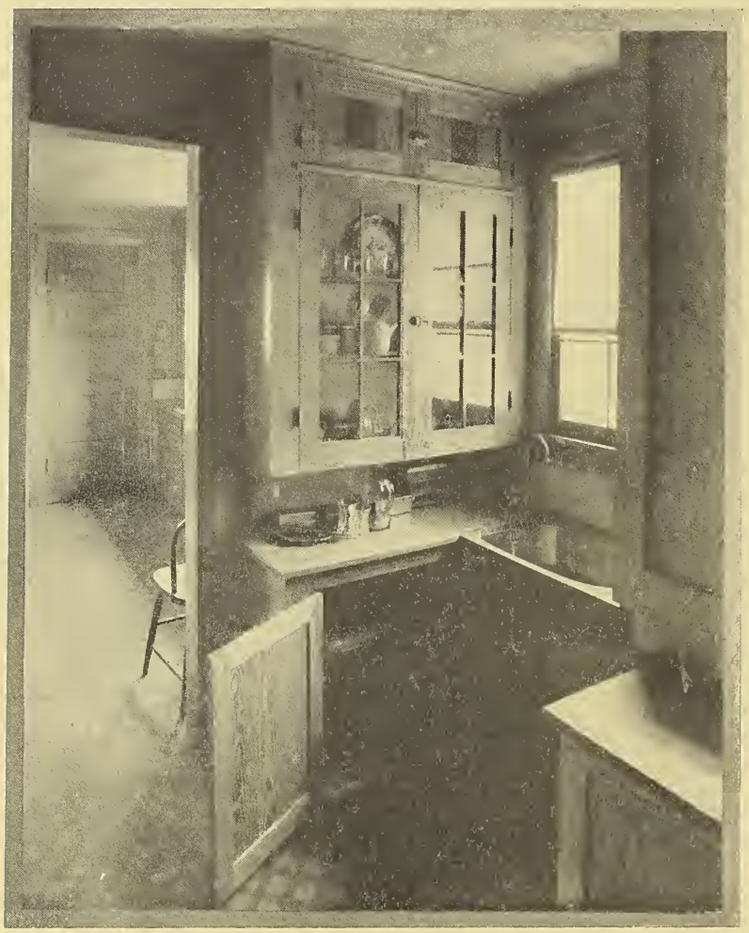


This cupboard with open racks for hanging saucepans gives easier access than rows of shelves

furnished with windows upon two sides. Groups of two or three high windows, giving abundant light, are often seen. Southern exposures are reserved for the living-rooms of a house, while the kitchen has the northern aspect that gives the steady light desirable in a workroom where much precise measuring and careful cleansing must be done. This cool, northern location is chosen also as best adapted to a room that often becomes too hot for comfort.

These desirable features of location and well-contrived arrangement do not, however, come of themselves. As in other rooms in a house, home-builders must have clearly-defined ideals and a capacity for insisting on their fulfilment. The placing of structural features needs particularly careful planning. The location of lighting fixtures must be considered at an early date. The wall treatment, selection of floor coverings, range, furniture and kitchen ware, are all matters requiring prompt but thoughtful decisions.

In planning kitchen equipment, rough drawings are found to be a help. The size of the kitchen deter-



A small serving-room between kitchen and dining-room eliminates noise and odors and provides convenient space for china and linen



The built-in cabinet gives opportunity to carry out individual ideas. It should have shelves of varying height and bins for flour

mined upon—and small kitchens are now the rule even in large houses—it is a good idea for the home-builder to draw to scale, upon the roughly-sketched plan, the built-in fitments and the furniture necessary for the room. Through following this method everything is clearly understood from the beginning. The home-builder does not suddenly find, for instance, that the kitchen sink is too near a corner to permit space for a drain-board; the actual measurements of a completed cupboard do not disappoint the housemistress. To aid in filling out a plan, rough elevations might be made of the sides of the room, showing cupboards and fixtures. And not only a scale should be used, but a six-foot rule, so that actual trial measurements of existing cupboards and fitments may give to the amateur, as they often do to the professional, a clear idea as to how the paper dimensions will turn out. Even when the architect has a special talent for designing convenient fitments, as often happens, the formulation of the ideas of home-builders gives results of individuality, helping greatly to produce distinctive equipment.

In planning the kitchen, it may be divided for practical purposes into the cooking side and what the French call the *côté de la batterie,* the side where the kitchen ammunition, the household pots and pans, stand ready for action. The other walls, being as a rule largely given over to entrances, are usually negligible in this connection.

The chimney location determines that of the range, usually on an inner wall. Whether to place the sink on this, the cooking side of the kitchen, or elsewhere, is the next point to settle. Where cost is not a first consideration, a vegetable sink is placed next the range, so that vegetables may be cleaned and the kettles filled with the least possible walking. A vegetable sink of solid porcelain with integral divisions for rinsing, etc., costs about sixty dollars in a thirty by twenty-two inch size. A sixteen by twenty-four inch sink, porcelain-enameled, is quoted at much less, about eighteen dollars.

In the small house-kitchen, where there is but the one sink and dishes must be washed in it, their convenient stacking and draining are necessities. The sink requires good lighting and sufficient space on each side for drain boards and ledges. Placing it at about the center of the "ammunition wall," with a group of high windows above, on one side a drain board, on the other a ledge for unwashed dishes, is found a good solution of the small kitchen problem. A sink five feet long, of porcelain, with integral drain shelf, costs complete in "B" quality ("A" quality is a rarity, fabulous in price), about one hundred dollars, and is a beautiful and luxurious-looking affair. A porcelain-enameled sink twenty by thirty inches, costs about fifty-eight dollars with porcelain-enameled legs. A rubber drain mat, necessary to prevent breakage, comes at about two dollars. A roll rim sink and back with brackets, enameled, costs eighteen dollars and fifty-eight cents. If preferred, a "pantry" sink of copper or German silver, instead of the porcelain variety, may be set into a ledge beneath the window. The cocks are out of the way, a convenient feature. Two of these sinks, one for washing, the other for rinsing, with movable faucets, form an admirable outfit. It is desirable to cover the ledge with sheet copper fastened to the edge with large-headed tacks. Any special size desired is furnished to order by the manufacturers of these sinks, but, like the porcelain ones, they come in great variety of sizes and quality. A good quality should be specified.

On either side of the sink are often built-in cabinets, one providing space for saucepans, spoons and cooking dishes, the other for cooking materials. In planning the saucepan cupboard an

inventory should be taken of pots and pans, and space adequate for them provided, neither too much nor too little. It should have one good-sized compartment, fitted with hooks for hanging saucepans and spoons, easier of access in this arrangement than if put on shelves. The compartment should be above the center ledge, not below it; or the upper part of this cabinet may consist of an open rack on which hang the ladles and saucepans in every-day use, each having its own hook, like a tool on a tool rack, so that no time is lost in looking for the right utensil. For kettle covers narrow shelves are built, with grooves and a protecting rail. The French method of fastening to a wall against wood strips a long metal or wooden rod, fitted with movable hangers from which depend the saucepans, might well be adopted in the American kitchen. Compartments with shelves are planned for bowls and tins. Shelves only a few inches apart are found convenient for cake tins and platters, which then need not be placed one on top of the other. One or two narrow shelves, half way between ordinary ones, are a space-saving feature, used for cups.



Neat cases lining the walls are much better for preserves than the old fashioned hanging shelf

The cooking material cupboard is sometimes supplemented by one of the kitchen cabinets on the market. One of the new cabinets, with removable flour bin, sliding nickel-plated table top and glass sugar bin sells at about twenty-eight dollars. If one of these cabinets is used, it should, if possible, be procured unfinished and stained or painted to match the other woodwork. If the built-in cabinet alone is planned, it should contain bins for flour, usually zinc-lined boxes beneath a ledge, hinged on the bottom, so that they can be tilted forward by a drawer pull at the top. Another variety, perhaps preferable, is above the table ledge that the cabinet always has, allowing the flour to be sifted through an opening in the bottom. There should be two receptacles for different kinds of flour. A niche is provided for the bread board, which pulls out, forming a shelf. If a large sheet of plate glass is kept on the ledge, it makes an excellent pastry board. Receptacles for sugar, spices, etc., are furnished. In a cupboard recently fashioned is a compartment fitted with graduated steps in pyramid form, used for holding little jars of dried herbs and spices. The inside of a door is sometimes utilized for holding small boxes with good results.



A model kitchen. The sink requires good lighting and space on each side for drain boards and ledges. Placing it below a group of high windows gives excellent results

In planning structural features on the cooking side of the kitchen, a shallow alcove is designed for the range, lined with tile or brick. A hood, projecting above, is of metal or covered with sheets of asbestos. In selecting a range, a combination coal and gas range is considered the most satisfactory for all-year use, although a gas stove alone is frequently used in the city or suburban home, supplemented by a fireless cooker. The electric stove is still too expensive for general use. The combination range shown in our illustration costs ninety-five dollars.

Lights are planned above cupboards and sink, range and ironing fixtures. A special connection is made for the electric flatiron, if one is used, so that an electric light is not put out of commission when ironing is done.

Wall treatment in the kitchen is strictly hygienic. Walls are often tiled to a height of three or four feet, while the plaster above is painted in oil colors in a light tone. If tile is found too expensive the dado is given a coat of cement, marked off into squares, and then given several coats of white enamel paint, eight in a recent instance.

Floors are covered with linoleum cemented at the joints, or more rarely with tile. In the latter case rubber mats are desirable, as tile floors are very hard on the feet of kitchen workers. Floors of unfinished wood are less often put in than formerly, since while attractive in appearance, they require so much time and labor to scrub that they are not really a paying investment.

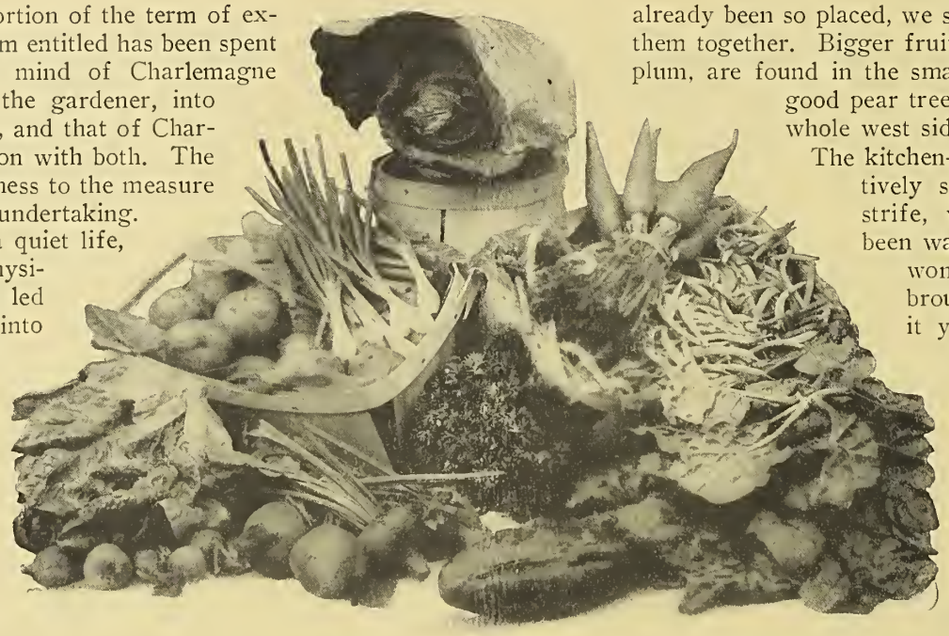
Woodwork is sometimes stained and given a paraffine finish, cleaned by rubbing occasionally with the paraffine oil. Pine and cypress are attractive in this finish, although pains must be taken not to allow a careless maid to spot the wood with water. An oil rubbing on the unfinished wood gives a light, pretty effect. Highly varnished wood is not so popular as it once was, since there is a sentiment in favor of pretty finish for woods, even in kitchens. Perhaps the most cleanly and attractive treatment is to paint the woodwork, in this case usually whitewood, white with an enamel finish.

Kitchen color schemes are simple and positive, subtle values being reserved for other rooms of a house. White and buff, gray and white, blue and white, pale yellow and gray, are most often

(*Continued on page 224*)

The Epicure in the Garden

HOW THE GARDENER AND THE COOK COLLABORATED TO SUPPLY THE TABLE WITH TASTY DISHES—A VEGETABLE GARDEN PLANNED TO PLEASE THE APPETITE AND KEEP THE TABLE SUPPLIED ALL YEAR



BY LUCY H. YATES

SOME considerable portion of the term of existence to which I am entitled has been spent in trying to bring the mind of Charlemagne (*alias* Charles Mann), the gardener, into agreement with my own, and that of Charlotte, the cook, into unison with both. The following account is witness to the measure of my success in this undertaking.

Necessity for peace, a quiet life, and simple diet, the physician's prescription, had led the Better Half and me into choosing a home in the country. Eventually we met with a house and garden suited to our requirements. It was an old house, much out of repair, and inconveniently planned, but it had an exceptionally well-situated kitchen garden, and this decided us in its favor. Its previous owner had been a better gardener than architect, and if only for that reason we have had cause to be grateful to him. A good kitchen-garden has generally to be made.

This kitchen-garden was a piece of land of nearly two acres, innocent of all trees save those which grew by the walls and a few espaliers down the middle paths. It was sheltered, open to the south and sloping.

I explained to Charlemagne that it was our intention to live principally upon vegetables and fruit; that simple diet, with very little meat, was essential to our health; that Charlotte, the cook, was an importation from France, and would require many things to be grown for her to which she had been accustomed in her native country, and finally that I myself had a firmly-rooted conviction that it was quite possible to have, all the year round in perpetual supply, every vegetable which mortal man might desire to eat, providing that sufficient energy and enterprise were brought to bear on their production. I hinted at a forcing-house and frames, and a cool cellar, and I saw his eyes brighten. His imagination was touched, and this was well; the main thing, all the same, was to get vegetables.

After that we came to questions of detail. We have, I think, always been occupied with questions of detail. Sometimes I am exasperated with Charlemagne's attention to detail as I watch him slip and cut, and stipple over his work; sometimes he breaks out into open rebellion at my insistence that every letter of my plans shall be accurately followed. I am winning Charlemagne over, and inspiring him with an enthusiasm for intensive cultivation.

Therein lies the secret of such success as we have achieved. With intensive cultivation you may do wonders with quite a small plot of land; without it, the finest acreage will yield but little.

Our ground is oblong in shape, with its longest diameter from east to west. This gives a good stretch of both warm and cool borders. The bush fruits grow together in squads instead of being planted promiscuously here and there, and if they had not already been so placed, we should soon have brought them together. Bigger fruit trees, such as apple and plum, are found in the small orchard, and the only good pear tree that we possess fills the whole west side of the house wall.

The kitchen-garden has been, figuratively speaking, the cockpit of strife, where our battles have been waged and a few triumphs won, for now that we have brought it to the point where it yields for us not only a never-failing supply of roots and *légumes,* but also a continuance of the rarer dainties, we have good reason to triumph. It has all been a matter of management, of careful rotation of crops, of frequent sowings, and prompt clearings, helped by the use of movable frames and a little forcing.

I have been insistent about having only small sowings made at a time, but of having these kept up at regular intervals, so that as fast as one row had furnished its crop, it should be cleared to make way for another. Nothing has been left to run to seed, nor have we saved for our own seed. This may seem to some an extravagance, but we have found that it pays best to buy fresh seed grown elsewhere. By liberal trenching and a little manuring of the soil we secure quick growth, and the rule is to gather everything when it is somewhat under rather than over its prime. Quality, rather than size and quantity, is the best aim where consumption is small, but were I growing for sale, I should still prefer to sell the well-flavored small bean or marrow to the mammoths without taste—things which have to be cooked in pieces because they are too big to be cooked whole—it must have been these which a French satirist had in mind when he talked of *légumes à l'eau!*

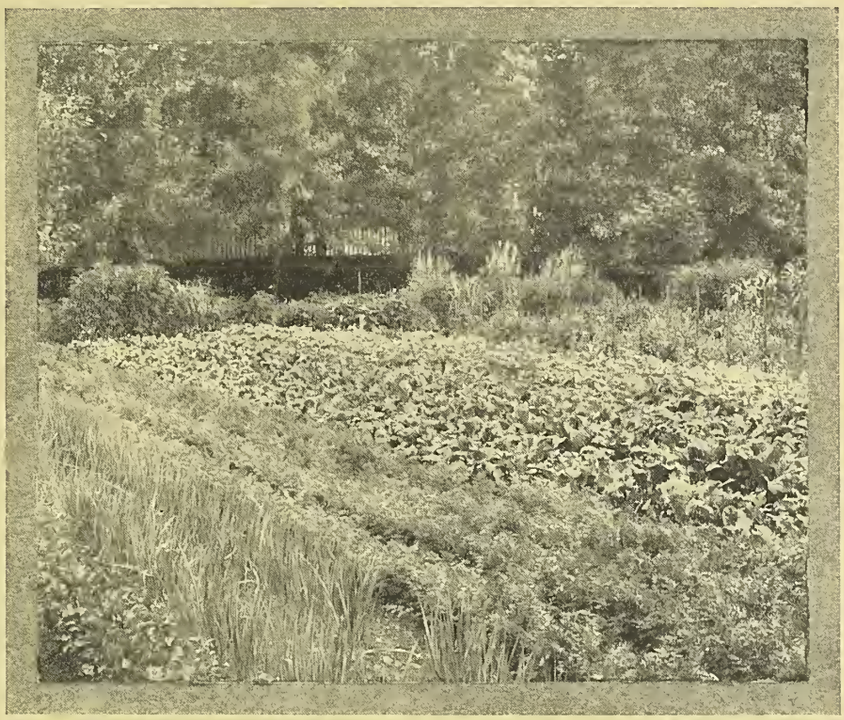
A dozen strong young plants, properly set out and attended to, amply suffice for our requirements at one time. We do not wish to be condemned to eat cauliflowers day after day simply because it is their season, and they are clamoring for consumption, or to fatten on beans when we would prefer to have a salad, or to be surfeited with salads when we desire a mess of pottage. But we are never without the material for a salad at any time of the year. We have peas from April to August; we have beans practically always on hand; young carrots and turnips ready for pulling in May; crisp radishes and cress in the late summer. The mushroom house supplies us with early seakale and rhubarb and chicory, as well as with edible fungi, while our first tomatoes and cucumbers come from the warm brick pits.

Experience has shown us that it is not needful to grow so many different kinds of vegetables, even though you are desirous of having a perpetual supply, as it is to keep up the regular succession of the crops. What is most important is to have facilities for growing winter crops, and for some forcing, so as to be independent of weather and season. This we have managed by careful use of a small hot-house, a larger cool-house, and frames.

At first Charlemagne showed himself imbued with the usual ideas as to the laying-out of the land, marking out the plots for rows of cabbages and patches of potatoes after the ordinary fashion. Very quickly I placed a veto on any such proposals. No part of our valuable space was to spare for such things as could be bought for a few pennies from any green-grocer or market gardener. Cabbages, I was careful to explain, took too much out of the soil and gave back too little in actual value; cauliflowers, it is true, were of a similar nature, but as the cauliflower was adapted to so many uses in the kitchen, it could not be dispensed with. Potatoes, except for a few rows of earlies, which, when eaten directly after lifting, possess a flavor comparable to none, we could not spare land for, except where they might prepare the soil for a better crop later on. Carrots and turnips grow best on soil which has been previously occupied by potatoes or celery rather than on freshly manured ground. This matter of the wise rotation of crops was one about which I read much, and after making many trials we have at last arrived at a systematic plan, to which we now adhere.

Our early turnips we sow in frames, but the second crop is sown between rows of peas and thinned out freely. Lettuces are pricked out between rows of celery, and the finest grow on the ridges after the celery has been earthed for the autumn. Spinach we set between peas and beans, sowing a fresh row every fortnight, and thus keep ourselves supplied all the summer.

Our first dishes of spring greens are compounded from cuttings of sorrel, spinach, turnip-tops, young nettles, and mercury—for we grow "Good King Henry" as respectfully as any other herb. With this variety, Charlotte is able to ring the changes without being at a loss for a *purée* at any time it is asked for.



The kitchen-garden was a piece of land of nearly two acres, sheltered, open to the south and sloping

We have cucumbers ready for cutting with the beginning of May, and they last throughout the summer by keeping the glass open. Tomatoes (under glass) we cut early in June, and those grown out of doors begin to produce in July, and the two lots keep us supplied right up to Christmas. Some variety of lettuce or endive we find it possible to have all the year round, and the salad bowl is in almost daily use. Soup vegetables are also required every day, and Charlotte makes a voracious demand for good roots and onions for her savory stews, wherein, as she says, it is the meat that flavors the vegetables, not they the meat. I fear me she would consider her skill but half appreciated if we failed to supply her with such things as salsify and celeriac, aubergines and chicory, as well as the more ordinary roots, or if there were not a few *potirons* hanging up in the storeroom with onions and shallots galore. From beets she makes most delicious little dishes as well as salads. And, of course, there has to be material supplied for the making of those various conserves which fill the larder shelves and adorn our table in winter days.

It may seem ambitious to have attempted the growing of melons, yet the home-grown melon is one of the choicest of our dessert fruits, and its growing offers no insuperable obstacle; moreover, it was like offering a sop to Cerberus to suggest its cultivation to Charlemagne. He went up in his own estimation by several degrees!

Together we discussed the requirements of the melon tribe; we decided that a frame covering a brick pit, with a six-inch hot-water pipe going round it, with a bed of leaf mold (chiefly oak and beech), would give the necessary heat. Our authority told us that these leaves were better than the richest manure. We had to buy a sackful from a nurseryman, sufficient not being otherwise obtainable. The seeds we sowed first in small pots in a mixture of leaf mold and loam, embedding each seed in a little silver sand, then set the pots in the bed with a bottom heat of between 70 and 80 degrees. When they grew big enough to shift into larger pots, a stronger compost was used, and finally they were planted out on ridges in the frame itself, and as the fruit began to form, the young plants were watered with liquid manure. When a sufficient number of flowers had opened we fertilized them by hand, using a camel's-hair brush, and kept the lights open. As soon as the fruits came we picked off any that were ill-shaped, and gave the plants a little support from time to time. While they were making fast growth, plenty of air was admitted into the frame, and the foliage was syringed daily. If any sign of red spider appeared a little sulphur was put into the syringe. The syringing was discontinued after the fruits began to ripen, and we gave less moisture with more heat, and when we could scent the aroma we knew the time had arrived for cutting. Blessed time!

In a favorable season we have had a fair supply of peaches and apricots from the trees that grow on the south wall, but a cold or wet year is fatal to these. Grapes we have not yet attempted. But a veritable triumph it has been when we could set a dish of fully-grown, well-ripened strawberries before the Better Half for his delectation, late in May or early in June. These are not pot-grown, oh, dear no! We allow the plants to make their ordinary growth out of doors until the crowns are fully developed, then in April we lift them with a spade, with a good quantity of soil, and lay them on the bench on the south side of the cool-house. Here they quickly come into flower, and as the windows are opened wide during the day the bees are able to do their work. After the fruit has set we raise the bench to bring it nearer the glass, and keep the roots well supplied with moisture. It swells rapidly, and soon ripens with this slight protection, being carefully shielded from the cold at night. These strawberries are as fleshy and full of flavor as when grown out of doors in the ordinary course, and in this way we prolong our enjoyment of this delicious fruit by at least a month.

(*Continued on page* 209)

When the Spring Run Starts in the Sugar Bush

THE OPERATION OF MAKING MAPLE SIRUP AND SUGAR—A SIMPLE PLANT, REASONABLE CARE, WORK AT A SLACK TIME OF THE YEAR AND PLEASURE ILLIMITABLE—A PROCESS THAT HAS DELIGHTS AND PROFITS COMBINED

BY

WILLIAM A. VOLLMER



Photographs by Julian A. Dimock

The Receiving Tank



RAY looked up at the gray, scudding clouds and seemed to sniff the air.

"We're due for sap weather pretty soon," was his diagnosis.

For a farm hand he certainly was uncommonly gifted, I thought. Perhaps his association with nature had preserved an elemental keenness of the senses that we lose in the cities. I had noted that he appeared to have a certain divination of seasons and times; an instinct seemed to tell him when fruits were ripe or potatoes ready to be dug. It was different from the accuracy of the cook at which I once had wondered, for she had straw auguries or made experimental probes with a fork, but he just knew, sphinx-like.

I ceased wondering at his weather wiseness, with the image of maple sirup growing in mind. This prophecy, if true, would give me the secret of the delectable liquid that had made endurable a bitter cold, snow-bound winter by adding relish to the breakfast cakes which I believe were one form of fortification against many forty-below mornings. And the jug was running low! I shivered at the thought as I crossed the dirty barnyard snow, and prayed that the prediction might be true.

And the next morning saw a change. It was clear and sunshiny and what little breeze there was came from the southwest. I met Ray coming home from the cow barn, rumbling an approximation of melody from somewhere within him.

"Bess give us a spotted heifer this morning. It's a good sign! Put on your felts and come on up to the sap bush. Looks like we could start getting them pails out and the trees plugged."

Sugar from the cane, maple sugar from maple trees—but sap bush sounded suspiciously like sassafras tea. The process was still to be learned.

The sap brush was a stand of big straight maple on a hill back of the place. Most of the trees stood on the south slope, but the growth was thick up to the ridge and ran over upon the north declivity. In summer it was a shady forest, thick with leaf-mold under foot and a dense undergrowth of seedling trees and wood plants, spotted with occasional splashes of sunlight. A cool and quiet retreat that bore a look of studied wildness as though its condition were man regulated. And it was.

The straight tree trunks, now bare of twigs beneath their branching crowns, were like squads of wood warriors at parade inspection, each detachment separated by a lane of snow. As we got into the woods I found this due to a regular system of roads and crossroads, not particularly noticeable in summer, but now the highways leading to a broad shack set close against the hillside. One roadway ran straight by the back of this cabin almost level with its roof, and all the intersecting branches seemed to converge upon it, for here, I learned, the sap boiling was done.

"Guess you've got to help open camp," was Ray's order as he fumbled with a rusty lock; and I was enrolled for the season.

Within the boiling house I was introduced to the evaporator, really a great pan four by sixteen feet in dimensions, fixed above a furnace or fire-pot of brick and masonry, the pan bridging over the two side walls which connected with a tall chimney at one end. There was a door equipped with a damper closing the front. The evaporator pan itself had a corrugated bottom and was divided into a number of similar connecting compartments by a sequence of partitions. If you soldered together half a dozen tin boxes such as wafers come in, you would have an approximation of what it looked like. Everywhere about the room were tin pails stacked in tall columns or stowed on shelves.

From a closed box Ray unearthed a quantity of what he called "spouts"—metal cylinders about two and a half inches long, but of very small bore. Each had a little metal drip at one end and a little projection on the upper surface about an inch from the other end that was to hold the pail. The ordinary pipe stem if notched—to keep the pail from slipping—near the end driven into the tree would make a working but not advisable model. We spent much of the day cleaning out the pails, boiling the spouts and then set out to "plug" the trees.

Ray carried a brace and bit, an ax, and a load of spouts; I as many of the pails as possible. Going to the crest of the ridge Ray started work on a tree on the outside of the sap bush, and gently smoothed the bark off with his ax at a point a little above waist high, taking care not to chip it. He tilted the auger upward at a slight angle and bored a hole about two inches deep, carefully removed any shavings or chips and hammered in a spout, so that it just penetrated the outside bark. The hole that he had made was a trifle under a half inch in diameter and as the tree was a large one, I judged it merely penetrated the wood next the bark.

"It's better to bore on the south or east side of a tree because you get a better flow," he explained. "Guess the sun has something to do with it. If I let you do any of the tapping, don't you go so deep on a young tree. An inch to an inch and a half is enough."

So we worked as rapidly as possible. Sometimes I noticed that he hung two buckets and occasionally three where the trees were especially large. Usually true to this belief about sun influence, he selected a spot unshaded by other growth. Since he saw that I was curious at the procedure, he volunteered:

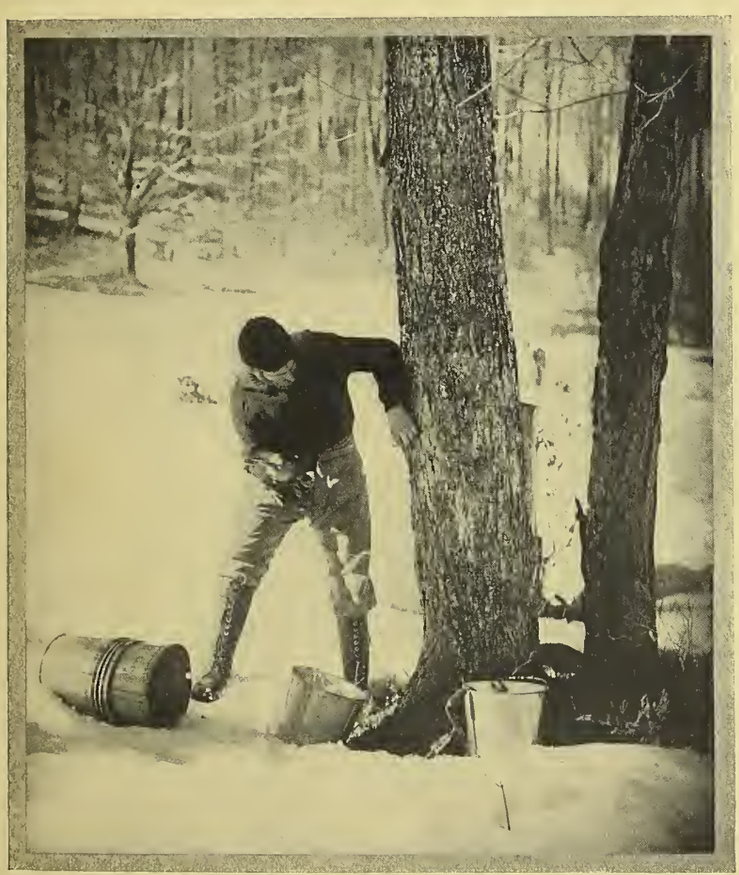
"Some says that two buckets kills a tree, but where the stock is full grown first growth I never see the tree done harm by two, and I use three on the big fellers, but they don't want to be close together or one above another."

The buckets were hung by slipping the spout through a hole near the upper rim. The little ridge on the spout held them from sliding off. They were of light tin plate, soldered on the outside and of about ten quarts capacity, and as the slope of the sides was but little from the perpendicular they hung close against the tree and in this way took much of the strain from the spout.

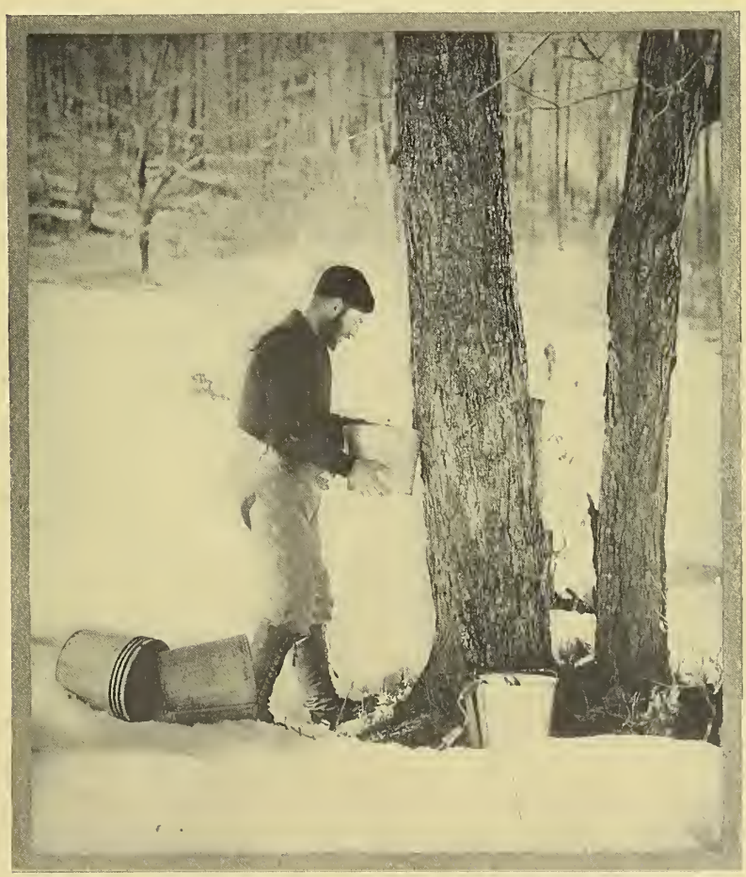
After a hard day's work I had the satisfaction of seeing all the good trees fitted with sap buckets and nothing else to do but wait for a slight thaw to start the sap running. We were none too forehanded about our preparations, for the next day found the temperature much moderated, and on excitedly visiting the bush we were delighted to find the sap issuing drop by drop from the little metal spigots. When I returned from a reconnoitering expedition I found that Ray and a gang of helpers were busy by the boiling house in fastening a big tank upon a sled that looked like a stone boat set on broad runners. A supply of gathering buckets—tin pails fitted with handles, but broader at the bottom than the top and of greater capacity than the tree buckets—was being distributed. The omniscient Ray informed me that this peculiarity of shape made the pails more stable in carrying; that they didn't slop over easily and were not apt to tip when the edge of the receiving bucket was rested upon them in pouring out the sap.

It was a bright balmy morning toward the last of February as we started work. The snow melted rapidly beneath a warm sun and everywhere the ground covering of leaves appeared. Some suggestions of spring's awakening seemed to get in the blood as we worked and we felt atune to Nature's throbbing back to life. You have seen a dog stretch; well, some of that animal ecstasy filled us. It was as though we ourselves were part of nature and the sap a new blood coursing through our veins. Muscles seemed to long for the strain of emptying the buckets and carrying the heavy pails. We all worked actively. My throat grew dry and thirsty, and I seemed to crave the clear, icy liquid in the pails. It tasted like sugared water with just a tang present, but was apparently as thin as water. It is a sort of superstition among the workers that the sap is a sort of potent, heady beverage, and whether due to unwonted exercise or not, when evening came I found my temples throbbing and my head light and buzzing.

As the work progressed the necessity of the network of paths became apparent. The sled with its receiving tank passed along



After the bark was smoothed and a small hole bored, Ray carefully drove in the spout



The tin receiving bucket he slipped over the metal spout, and a little ridge kept it from sliding off



Working from tree to tree the receiving buckets were emptied into peculiar carrying pails broader at the bottom than at the top



One morning ice was found in the pails. This was thrown away, but what sap remained unfrozen was retained

the roadway and was in touch with every section, and since we worked downward from the crest of the ridge it was driven below us, and we had but a few steps to carry the full buckets. Even the horses seemed to be alive to spring's approach and worked well, but when the sled was stopped, greedily reached for every green twig that rose through the snow. In some places where the sled had to go the snow had completely melted, but the broad runners slid easily over the slippery leaves and wet ground. When the tank was full it was driven down to the back of the boiling house and its outlet connected with a pipe leading to a great storage tank within the camp and the contents allowed to flow down. By evening the buckets had all been emptied, and those that had been seen to first, had been emptied a second time, but in the early afternoon the run had been sufficient to start boiling, and I changed my occupation by going into the sap house and helping at the evaporator.



At nightfall the boiling still went on in the glowing cabin

Between the walls of the fire compartment logs had been stacked and a roaring fire was heating the pan. The sap ran from the storage tank trickling a zigzag course from one compartment to another, but its flow was controlled so that in each section there was a little more than an inch depth of sap. The whole pan seemed to be aboil and steaming, and the compartments showed very different colors. Where the sap entered it was clear, but by the time it had reached the last section it was dark and sirupy. One man with what looked like a dust pan with a perforated bottom skimmed off a brownish froth that gathered.

Ray looked in the last compartment shortly after the pan had been boiling and seemed to be critically testing the bubbles as they rose to the surface. In a little while he remarked, "Guess she's about done;" and pulling beneath the spigot a large milk can fitted with a wide funnel top over which was stretched a piece of felt as a strainer, let the sirup drain off.

So the process continued. A constant supply of sap found its way into the evaporator, worked its way left-right down the pan, getting thicker and heavier as it progressed, until at regular intervals it was drawn off as sirup. I wondered again at the knowledge that could tell the finished sap, for I knew that it must be of standard weight and density.

"Some tells one way, some another," said Ray. "The feller from the Experiment Station told us to get this little glass thing to test it." He showed me what was familiar at once, a Baumé hydrometer. "You draw off some sap into a tall jar, fill it full to the brim and put this thing in and see

how high she floats. He supplied me with a table of figgers to make corrections, for he said the blamed thing rides higher as the sap is hotter. So when you are through with readin' a thermometer and figurin' and one thing and another, the sap is right if this reads somewhere around 35.6. But I am willing to bet any of them fellers that I can tell by the bubbles when the sap is right oftener than I could with this thing."

And even though I would ordinarily prefer the laboratory method and the useful hydrometer, I felt that where there were such men as Ray the process might better go without them.

"You've got to get this pretty near right," continued Ray, "for if you can thé stuff too thin, she'll go sour, and if its too thick in a few days your can may be full of rock candy."

The boiling did not stop at suppertime for there had been a heavy run of sap, and as it grew dark the house still was wrapped in steam and shot strange beams of light from crevice and window. Ray started a fire outside between two great stones. When the logs had burned down to a glowing bed of coals, he swung a great iron kettle between the stones so that it might be easily tipped when necessary, and filled it with sap. The fire was kept hot but not allowed to flame up or smoke.



The sled, driven over a network of roads, saved distance in carrying the sap

"We used to have to do it all this way before the boss got that pan in there. I'll admit the other works faster and it may give you better sirup and sugar, but I hate to give up the outside boiling. Somehow the sap season don't seem real without it."

The sap was soon boiling, and as it browned into the proper sugar color, he added a little fresh sap every now and then "to keep it clear."

We sat around the fire eating a frugal meal, but with great relish. Ray added eggs that he boiled in the sap and a kind of candy white and sticky that he called "jackwax." He filled a pan with snow and with a ladle poured a little of the boiling mixture over it. It congealed almost at once, and Ray turning it on the tines of an old iron fork, handed it to me.

"I guess this jackwax ought to beat any store stuff you must have been getting," he remarked. And it surely did.

The boiling was continued, as Ray wished to try the first "sugaring-off." Since the sap seemed to grow still thicker, Ray took a great spoon and began stirring vigorously. More foam appeared to gather than in the evaporator, and it was skimmed off from time to time. Once he added a little sweet lard and the surface seemed to be less disturbed. He tested the liquid occasionally on the snow, and examined it critically. At last he said conclusively, "She's done," and poured the contents into some pans that he had brought and set us each to stirring them rapidly. The material was quite thick as he poured, and I saw that in the pan I was stirring the liquid turned rapidly, sugaring almost to the consistency of pulled taffy. I was advised to keep on stirring, and finally when the pan had been set in the snow I found that it had changed into creamy maple sugar.

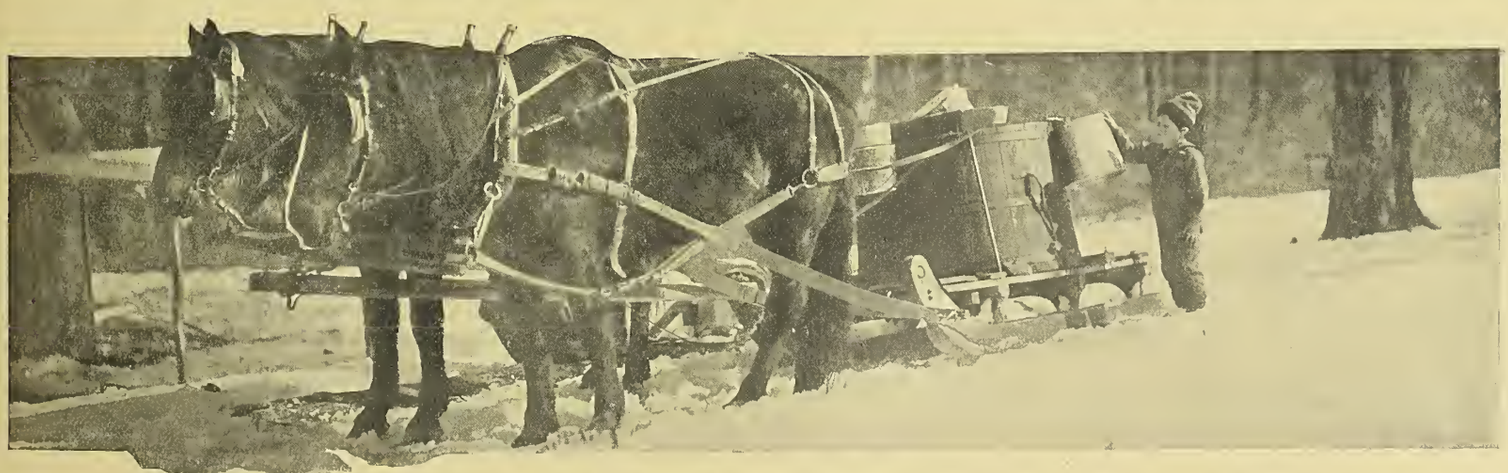
"Most of this we do in the kitchen after the sirup is boiling, but this sort of helps to find out what kind of sugar we're goin' to get. Sometimes it's good and white and other times sort of mushy in the center. But it looks good this year. Some folks can all their supply in sirup and some cake it all in sugar. That you have been using all winter was in cakes. It takes less room to store it and you can melt it up easily when you want the sirup."

When we had finished the operation of "sugaring-off" I noticed that with nightfall it had grown much colder. Indeed, it was again freezing weather, for the steaming drops from the roof of the camp had frozen into little icicles.

I disappointedly remarked, "I suppose this ends the "sugaring-off."

"Not on your life it don't," was Ray's enthusiastic reply. "It

(*Continued on page 230*)

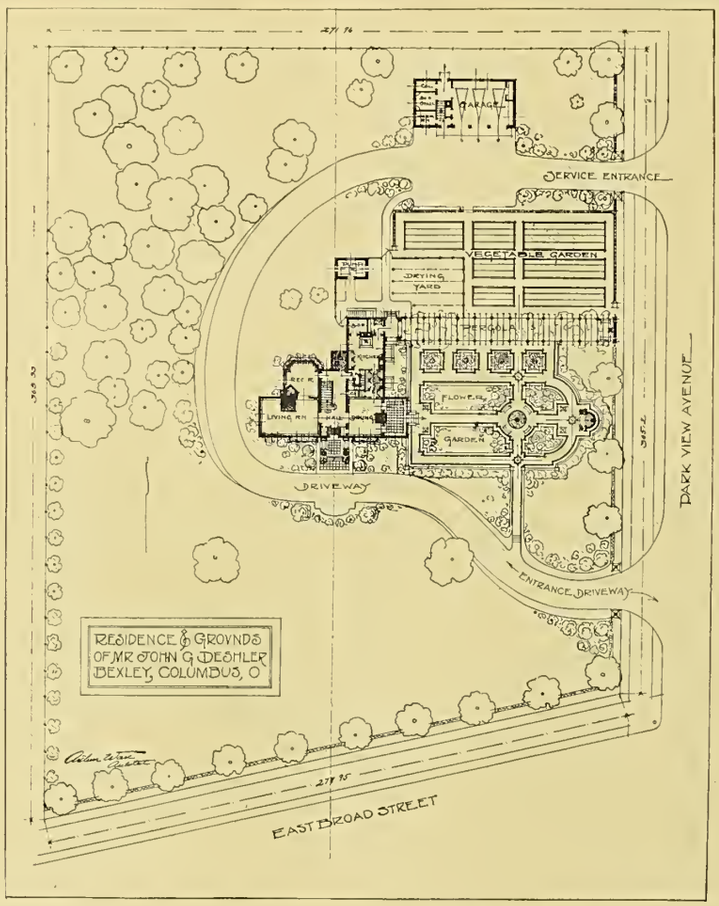


The receiving tank was fastened on a broad-runnered sled, and fitted with a funnel-like opening with a strainer to keep out twigs and leaves



Even the photograph of Mr. Deshler's house shows how well the brickwork is used, not only to give color effect, but texture as well. The difference in the various units produces the appearance of a fabric. Above the course of upright stretchers the bricks are laid with just the headers showing, and some are laid in an interesting design as shown between the windows

A House of Distinctive Brickwork



From the front the house appears perfectly symmetrical, but the plan shows a variety in the rear where the reception room with its bay window looks out upon the wooded part of the grounds and the kitchen is extended toward the service yard and vegetable garden. All the space is made to tell, but beauty is not sacrificed in this economy and there is diversity of surface

Designed by Arthur Ware, architect

THE RESIDENCE OF Mr. JOHN G. DESHLER, COLUMBUS, OHIO



An interesting stairway treatment is shown here where the treads are enameled in white. A warm color is given in the stair carpet



When the entertaining possibilities of the living-room are overtaxed, there is a reception room of generous size available opening from it



The dining-room shows an effective use of simple details used in harmonious balance. The French doors open onto the sun room paved in tile. This provides an entrance way into the garden



Inside the House

Timely Suggestions and Answers to Correspondents



The Editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope.

Some New Chintzes

A NEW line of chintzes, put on the market recently, consists of reprints from the original handmade blocks a century old. A special feature of those chintzes is that some of them are glazed, like the "copper-plate" used by our great-grandparents as bedhangings and for other purposes. The glazed ones have the advantage of not needing to be laundered, for a considerable time at least, and used as window curtains and cushion covers, the material adds to the old-time effect desired in a modern Colonial bed-chamber. The old blocks, considerately left stored away by our English cousins of a hundred years ago, are constructed by the insertion of very small pieces of shaped copper ribbon driven into their faces, the interstices filled with felt or rabbit's hair. They are said to represent the high-water mark of hand engraving and to be practically impossible of duplication today. Those of us who possess pieces of the genuine old "copper-plate" are interested in this revival. It is suggested that a similar reincarnation of the printed scrims now in vogue would be acceptable. For attractive all-over patterns, scrim would make charming and inexpensive window curtains for the country home sleeping rooms.

Two Schemes for Hanging Baskets

THE task of taking down my hanging baskets for their nightly immersion in a tub of water, was irksome because of the strength necessary to lift the heavy baskets. I have now devised a pulley system which does the work with ease. The hooks which supported the baskets were set into the porch cornice about a foot below the ceiling; I screwed a small pulley into the ceiling above each basket, and fastened a strong cord to the handle of each basket, which was then passed up over the pulley, hanging down to the floor. A steady pull on the cord lifts the basket from the hook, when it may be gently and steadily lowered to the floor: another pull on the cord restores it to its former position on the hook.

Wishing to start some wire hanging baskets for the porch I found it impossible to obtain moss with which to line them. Someone advised using fine screen wire, painted green. This held earth and plants securely and was not unsightly, yet had the appearance of moss-filled baskets. Others I filled with small sods, with the green outside: by keeping the grass carefully clipped I have good looking hanging baskets without moss.

Re-gluing Furniture

IF you have never been successful in re-gluing furniture so that it will stay glued, you may be in future by adding a coat of shellac or colorless varnish. It is the dampness attacking the glue which undoes the most careful work, and when this is protected by a coat of varnish (after the glue is dry) you will have no further trouble.

Marbleized Steps and Floors

PAINTERS say that the fashion of marbleizing front steps is coming back and that it may even extend to kitchen floors as was the case a generation or less ago. Young people of to-day do not know what a marbleized floor looks like, but their fathers and mothers will remember the time when it was common for kitchen floors to be treated in this manner and when it was not unusual to find the floors in dining-rooms of attractive houses so decorated.



One of the glazed chintzes which are now being reprinted

This is not a plea for the style, but only a statement of fact. That many people like it is shown by the report of the painting fraternity that more steps have been marbleized the past season than for years previously and the interest in this method of treatment seems to be growing.

Some painters do not know how to begin the work, but veterans at the trade have not forgotten. First the body color is applied, a strong yellow. When that has become dry, the painter takes a shingle in one hand and a brush full of white paint in the other and creeps across the floor, striking the brush on the shingle so as to distribute the paint in patches of widely varying size. When the white paint has dried, the performance is repeated, except that black paint is used. If the painter is expert, the result is quite a good imitation of marble.

When steps which are being marbleized are short enough so that the painter can reach all over them from one position, he does not wait for the paint to dry, but applies one coat after the other. First, however, he pins papers on any side wood work which may be exposed, for there is considerable spattering of paint.

A really new fashion in floors calls for stencil borders and is finding favor among many people. The stenciling is done in the usual way and if harmonious colors are used, the effect is good.

Cleaning Brassware

BRASS teakettles, or, in fact, any article of brass with the exception of Benares ware, can easily be cleaned in the following way:

First wash the brass well in suds made of equal parts of ammonia and water and soap. This will remove all dirt from the article, leave it free from grease and give it a semi-polish. Then an extra polish may be put on with a good brass polish. If the brass looks hopelessly tarnished, any good powder that is used for cleaning silver or brass, if moistened with vinegar

and applied vigorously, will remove the tarnish and leave a shiny surface. This treatment does not apply to lacquered brass, which never needs cleaning.

Lamp Wick Hints

TO keep the wicks of oil lamps in good condition remove them from the burners once a week, put them in water containing enough washing powder to make a good suds, and boil them for half an hour or more. This will remove the oil and leave them bright and clean. Do not cut the wick to secure a better light, but turn it just above the tube and rub off the charred portion with a match.

Built-in Furniture

ALTHOUGH designed primarily for the purpose of saving space and expense in bungalows and small cottages, built-in furniture may often be employed with good effect in houses of a much more pretentious character.

In the Eastern States furnishings of this sort have heretofore been limited almost entirely to window-seats and bookcases, but in the West, notably in Southern California, where the bungalow is omnipresent, buffets, china closets, writing desks and even beds are as much a part of the woodwork as are the door jambs and window casings. In one sense it has been rather overdone and worked to death, particularly in California, the idea being to put up houses that require as little furniture as possible, so that the man of small means who wants to own his own home, or the winter transients who desire to go to housekeeping at small expense, may be accommodated.

At the same time, however, out of the mass of good, bad and indifferent furniture of this sort designed by bungalow experts there are excellent ideas that may be adapted to the house that is not necessarily of the bungalow type. This is particularly true of dining-room fittings. In a living-room, with the exception of built-in bookcases, movable pieces of furniture seem rather more appropriate, but the dining-room lends itself admirably to the scheme for stationary furniture.



A heavy willow jardinière frame of wide adaptation

Primarily there is the china closet. China must be kept somewhere, but with the exception of the old three-cornered Colonial piece, the average china closet is an eyesore and a thing to be banished from a well-arranged dining-room. The built-in closet affords much greater space, is less conspicuous, and if properly planned adds not a little to the ornamental effect of the woodwork, for it can be made artistic.

Of course a handsome sideboard of mahogany or oak is preferred to the built-in variety, but if there are limitations in floor space as well as in purse a buffet may be designed and built in connection with the china closet. It is not only satisfactory in appearance, but provides space for commodious drawers for silver and table linen, a feature not always to be found in sideboards, even those of massive construction.

China closets built on either side of the chimney piece make an attractive addition to a dining-room if a built-in buffet is not needed, and in many cases a corner cupboard matching the woodwork of the room, with leaded glass doors and shelves for holding china is a decided convenience even when the dining-room is well furnished with separate pieces.

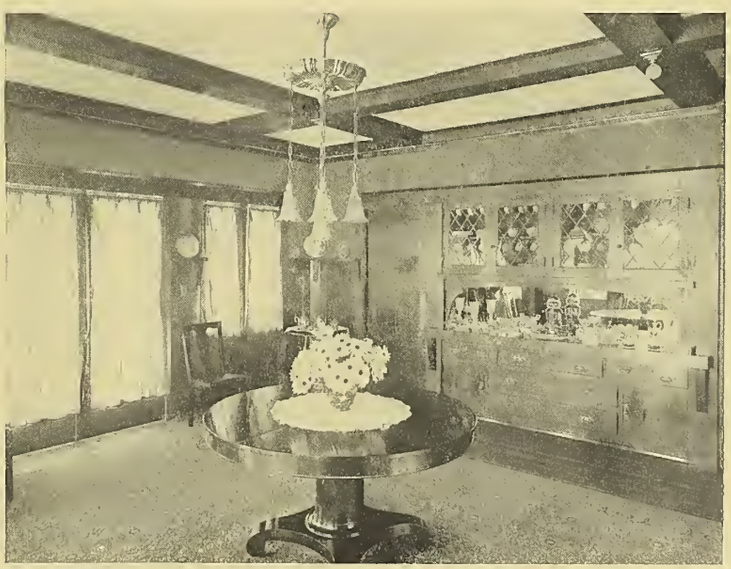
A Hanging Frame for the Jardinière

ONE of the newer additions to the long list of things that help to make the outdoor living-room attractive is a substantial hanging frame for a jardinière of large size. It is a rather crude looking affair of heavy willow strips plaited and wrapped until they are capable of sustaining a very considerable weight, such as a jardinière filled with earth must of necessity be. In appearance the frame is thoroughly in keeping with its outdoor surroundings, however, is of course unharmed by wind and weather, and is suitable for jardinières of every description, whether brass, pottery or crockery.

The willow is in the natural color but can easily be stained to match the color of the piazza if desired. The frame is about four feet high and can be placed on the floor and used as a stand for a jardinière that is to occupy a corner of the piazza, although it is primarily intended for a hanging plant. On account of its substantial construction vines growing in the jardinière may be trained over the large side handles as well as over the different sections of the main one with good effect.



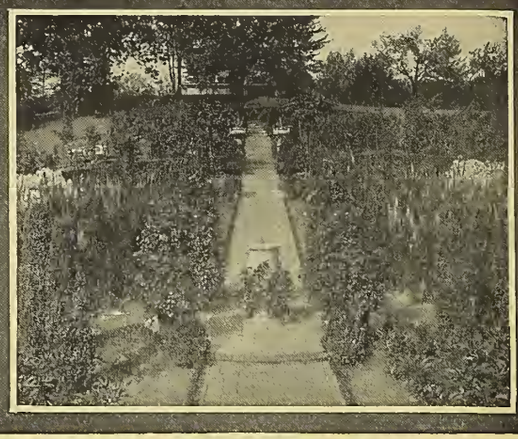
A particularly good effect is given by the position and design of the built-in china closets in this well-lighted dining-room



Simplicity and usefulness are well combined in these cupboards and drawers, which are in harmony with the rest of the woodwork



Garden Suggestions and Queries



Conducted by
F. F. Rockwell

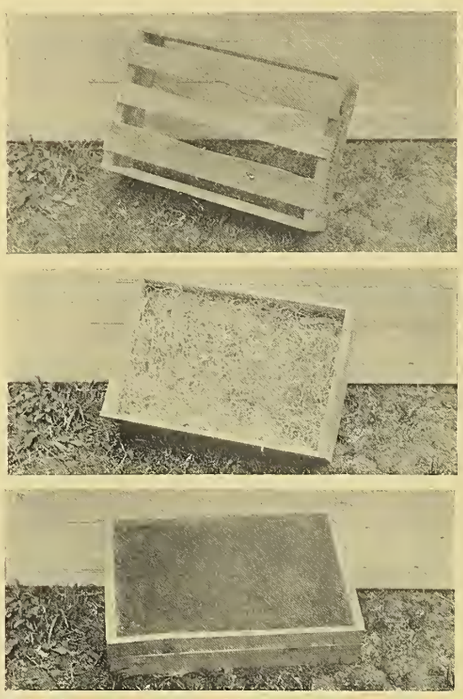
The Editor will be glad to answer subscribers' queries pertaining to individual problems connected with the gardens and grounds. When a direct personal reply is desired please enclose a self-addressed stamped envelope

MARCH, for the gardener, is about the most deceptive month in the whole calendar. It is deceptive in that, during such rough and uncomfortable weather, there seems to be absolutely nothing that one can do as far as gardening is concerned. The ground is still frozen hard or the mud is still deep, so that one does not feel like going out to remove the bean and tomato poles which were not pulled up last fall, as they should have been. Even when the blustering winds have dried the soil enough so that it will bear up a man's weight, one is apt to find that Jack Frost still has firm hold of anything that sticks down in the ground more than eight inches and the discouraged enthusiast returns to the shelter of the house with the feeling that this year spring never *will* come back.

The Big Task for March

MARCH, however, is but the calm before the storm. That may seem like putting the metaphor the wrong end to, but in reality it is not, for April is sure to bring a sudden flood of things insistent for immediate attention which annually swamps an army of unprepared gardeners.

First of all March is the month to get quick results, both actual and potential, out of your coldframe. Do not let yourself off with the statement that you have not the time to build or can not afford to buy coldframes and sashes. You cannot afford to be without them! Here for instance is an outfit which would cost you from ten to fifteen dollars, including the lumber for the frames, if you are willing to contribute personally the work of making the frames about which, when you once get it started, you will become more interested than Tom Sawyer's friends with his whitewashed fence. And I haven't a doubt that some enthusiastic neighbor will be dropping in to offer to help you with it, or at the very least show you how it should be done, before you get the first row of posts into the ground. What you would require for this standard outfit is one "double-light" sash, two sash, and three light frames which you can cover yourself with "protecting cloth," which can be had from reliable feed houses at from nine to twelve cents a yard, according to the grade that you get. All these sashes are 3 x 6 feet in size. The frame, consequently, will be 18 feet 5 inches long, inside measurements, allowing one inch for the elbow on the cross bar between each two sashes. The frame should be about twelve inches high in front and six inches in the back; correspondingly deeper, of course, if you expect to add soil or manure to the inside surface of the soil. There should be a light board partition, such as you could make out of packing or cracker boxes, between the three different kinds of sashes. To support the frames, simply drive down two-by-four posts firmly at each corner, and about every five feet of the length of the frame. To cover all cracks between the boards, you can tack a layer of old newspapers over the outside—you can get a large bundle of these for five cents from your news-dealer—and bank earth up against this at back and front and both ends. Of course, the sooner you can get the frame made and the sashes in place, the sooner the frame will be ready to use; but the returns from this little 6 x 8 piece of ground which can be used for a great variety of purposes, should be at least from eighteen to thirty dollars through the spring and early summer months; and that remember, is for one season only, and both frames and sashes will last for a great many years if you take care of them. One of the main uses for it, of course, is to take care of the overflow of seedling plants started earlier either in the house or hotbed, and that are now ready to transplant. Cabbage, lettuce, cauliflower and beet plants will be safe under the protecting cloth frames in an ordinary season, after the first of March. Extra early crops of lettuce, radishes, beets and carrots may be brought forward under the single glass sash and those covered with protecting cloth, while the glass is used elsewhere over more tender vegetables. The single glass sash may be utilized as a hotbed at this season for such tender things as tomatoes, peppers and egg-plants started therein. Seedlings and the cuttings of tender things for the flower garden should not be overlooked and the biennials and the perennials which may be treated as annuals should be included in the early plantings.



Old boxes may readily be converted into inexpensive but serviceable flats

Prepare for Outdoor Planting

IF your seed order has not already been made out and forwarded, be sure to order at once the seeds of such vegetables as beets, turnips, radishes, extra early peas, and anything else that you will want to put in at the first planting, which is now not far distant.

It is surprising what a great number of potatoes may be had from even a few short rows in the garden where they are given very good care in the way of cultivation and spraying for bugs and blights. The latter job is a very easy one if you happen to possess one of the small compressed air tank sprayers which have become so popular during recent years. To have the earliest and biggest crop of potatoes possible, it is necessary to start the tubers before planting. To do this procure a number of ordinary flats, made out

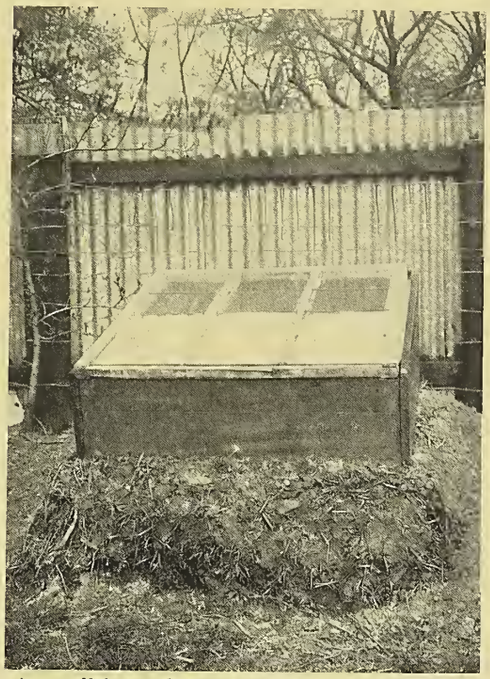
of boxes, and fill them about half full of medium coarse sand. Each box will hold enough for at least a hundred hills, as the potatoes are cut up into pieces containing one or at the most two eyes each, before they are placed in the sand. These pieces are made narrower and longer than when cutting for planting in the regular way. The lower half may be inserted in the sand and the upper half left above. They are packed in as tight as they will go without touching each other, a little additional sand is sifted over them, and they are watered thoroughly, and the boxes placed where they can receive plenty of light, preferably direct sunlight, and a minimum temperature of forty degrees at night. Within a few weeks the plants will be ready to set out and will be found to have made a remarkably large root growth and comparatively little top growth. If a sprout here and there seems to be getting too ambitious it may be pinched off when four or five inches high. When the sprouts are ready to plant, open the furrows three or four inches deep and place them in the bottom about thirteen inches apart with the roots turned down, covering tops and all where the latter are very short. In fact, if they are set out before all danger of frost is over, it is better to have the tops covered in this manner so that they will not be cut back in case Jack Frost happens to take a last look around before leaving for the season. For garden culture, where a horse will not be used, the ordinary varieties of potatoes may be planted as close as twenty-eight or even twenty-four inches apart between the rows with advantage, the more densely the vines may cover the ground and still have room to mature properly, the better it will be, as the ensuing shade saves soil moisture. In case of a severe and long-continued drought in June, it will be necessary to furnish some water to potatoes started in this way, as otherwise the little tubers which have set will not be enabled to develop.

Good Things for the Flower Garden

THERE are a number of very fine flowers which have not yet come into as universal use as they deserve, although they have been growing more popular every year; chief among these, perhaps, are the new forms of tuberous begonias. One thing which has kept many people from trying these beautiful and very valuable flowers is that the bulbs cost anywhere from seventy-five cents to $1.50 a dozen, and the growing plants about twice that amount. It should be remembered, however, that each bulb without any further expense and very little trouble, will live for a great many years, giving a handsomer showing each succeeding season. They should be started indoors as early in the spring as possible, in a warm place, putting each bulb by itself in a small pot, filled with a very light, rich compost. Water sparingly at first until growth starts, the concave side of the bulb being placed uppermost. As soon as the pot becomes filled with roots, change the plant to a larger pot, and continue to do this as often as the plant needs shifting. During the summer, plants need to be either kept in the pots or set out in the ground; in either case, they make a truly magnificent display.



When started in pots, peas are arranged thus before covering



A small but efficient hotbed for starting early plants

Salpiglossis, which until the last few years has remained undeveloped, is another flower whose new forms are beginning to create quite a sensation as they become more widely known. This plant is very easily grown, is a free and continuous bloomer and the flowers are remarkable both for their wonderful velvety texture and the strikingly unique coloring and veinings. The seedlings, which are very easily grown, should be started indoors or in a hotbed early in the spring in order to get results early in the summer. They can, however, be started outdoors along with the main lot of the garden flowers in late April or May. However, if you can, get a package now, and sow a row or two in one of your seed boxes. Pot off the little plants when they are large enough and keep them in a frame until about the middle of May, when they can go outdoors.

One still frequently sees a gladioli bed in which there appear nothing but the solid colored, small-flowered types which represented this genus of flowers twenty-five or thirty years ago. Still worse there are many gardens from which their tall, graceful flowers are missing altogether. This means a great mistake on the part of the gardeners, because even a single bulb of the wonderful new sorts which have been introduced so freely during the past years will make quite a gorgeous showing, and from that one bulb in the course of two or three years you can get a fairly large supply, as they propagate very readily indeed, and quite automatically.

Proper Drainage and Irrigation

THERE are two kinds of garden insurance which many people neglect altogether, although they pay as big dividends as any investment which you can possibly make. The first of these is drainage; the second, irrigation. The water supply is an extremely important factor in the control of plant life of all kinds and the remarkable thing about it is that too much is every bit as bad as too little. Now the ordinary home garden, and the flower garden, and the lawn too for that matter, where the soil happens to be too heavy, could readily and cheaply be drained in most cases where the place does not happen to be situated in a hollow, and even then there is usually some lowest point to which the water could be conducted without much trouble.

Under ordinary conditions, a half-acre garden could be under-drained for from twenty-five to fifty dollars—probably nearer the first figure. The drains—round drain tiles with collars—should be placed at least three feet deep, and if they can be put four, it will be much better. The lines should be for the former depth, twenty to thirty feet apart, according to the character of the soil; if four feet deep, they will accomplish as much if put thirty to fifty feet apart—so it pays to put them in deep. Drainers may prove of the greatest benefit.



Cucumber plants may be started indoors in the early spring

EDITORIAL

HYPERBOLE ON FARMS

FORMERLY when one doubted the authenticity of a tale one made veiled allusions to its connection with the fish business—amateur let it be understood—and felt that a telling blow had been delivered against it. So the term has become a classification. We would urge a rival epithet with just a shade of difference in meaning—the back-to-nature yarn. We do not wish to imply that all the glowing stories of the return to the farm are fabrications—far from it—but we do wish to show that important considerations are neglected which by their omission completely change the color of the narration. The rosy portrayal of reaping a fat livelihood from five acres is misleading because it neglects the personal element, or the scale element, or banking on ideal conditions, fails to discount contingencies such as blight, bad season, or inclement weather.

There was a tale that stirred the imaginations of many by telling how a farm was made to pay. It described a city-bred individual who without previous experience went to the country and cultivated his land until it yielded a rich return. The plantings and their dates were given, there were specific details of varieties and care. All this was beyond dispute—for experiment station methods. But the profits were figured in the terms of a small patch less than an acre, and the inference was that were the same plans carried out on a sizable truck farm the returns would be merely a matter of multiplication. In the first place, the scrupulous care that netted extraordinary results could not be given to any but a very limited area without a great increase in the cost of production necessitated by extra labor and farm machinery. Next, the products had not been actually sold, but were reckoned in terms of their market value at a point quite distant from where they were grown. Middleman's charges, marketing expenses, and transportation were forgotten. Such discrepancies altered the story, and if any deluded individuals followed the sanguine instructions they were doomed to dismal failure. The plan was out of scale.

So run the other will-o'-the-wisp stories. They tell of results under ideal conditions, and the one who follows their directions finds that he is thwarted by insurmountable obstacles. Rain, drought, freezing weather, an off-season for his crop, make infinite changes in the return. These things should be figured in by the man who looks hopefully to the country. What is more, the ever-present menace of a blight may change the credit balance to a heavy debit. This is not a pessimistic view of farming, but it is a caution to the one who rushes into it for a livelihood without a full knowledge of the extent of his undertaking. The farm stories are misleading also in their neglect of the personal element. They fail to make note of the fact that the novitiate farmer in the story is apparently as strong as a mule and has a capacity for fourteen hours of *labor* a day, and a bulldog tenacity of keeping at his work fair weather or foul.

All these are considerations that we think are necessary where a man changes his occupation and takes up farming as a *business*. If a farm is bought simply as an investment in happiness, they do not weigh so heavily, but when livelihood and income are dependent upon the land, such warnings are vital.

It is to clear away the mist of misapprehension in regard to farming as an occupation that we publish John Anthony's story. The Eldorado seeker is still enticed to disappointment as he was in '49. To-day the golden hope is a sinecure of broad lands sowed by scattering seeds to the wind and harvested with as little exertion as Lamb's roast pig was eaten. But it was no such luxuriant garden waiting to be harvested that made so many Western fruit growers successful. It was persistent work, well and intelligently and vigorously applied.

We think John's actual experience as interesting as the imaginary farm tales, besides being a real test. The first year he had good luck and scientific methods told well. This last year was the so-called "off year" for apples, and it required resourcefulness to turn failure into success. He glosses over no hardships and shows what work had to be done. He spent time in learning essentials at the summer school of an Agricultural College. To get results it meant long hours and constant exertion. Such a story will be inspirational to the man who honestly wants to become a twentieth century pioneer, to emigrate back to the land, but it will shy off the dilettante farmer, the seeker for easy and large returns, and in so doing save many a disappointment and loss.

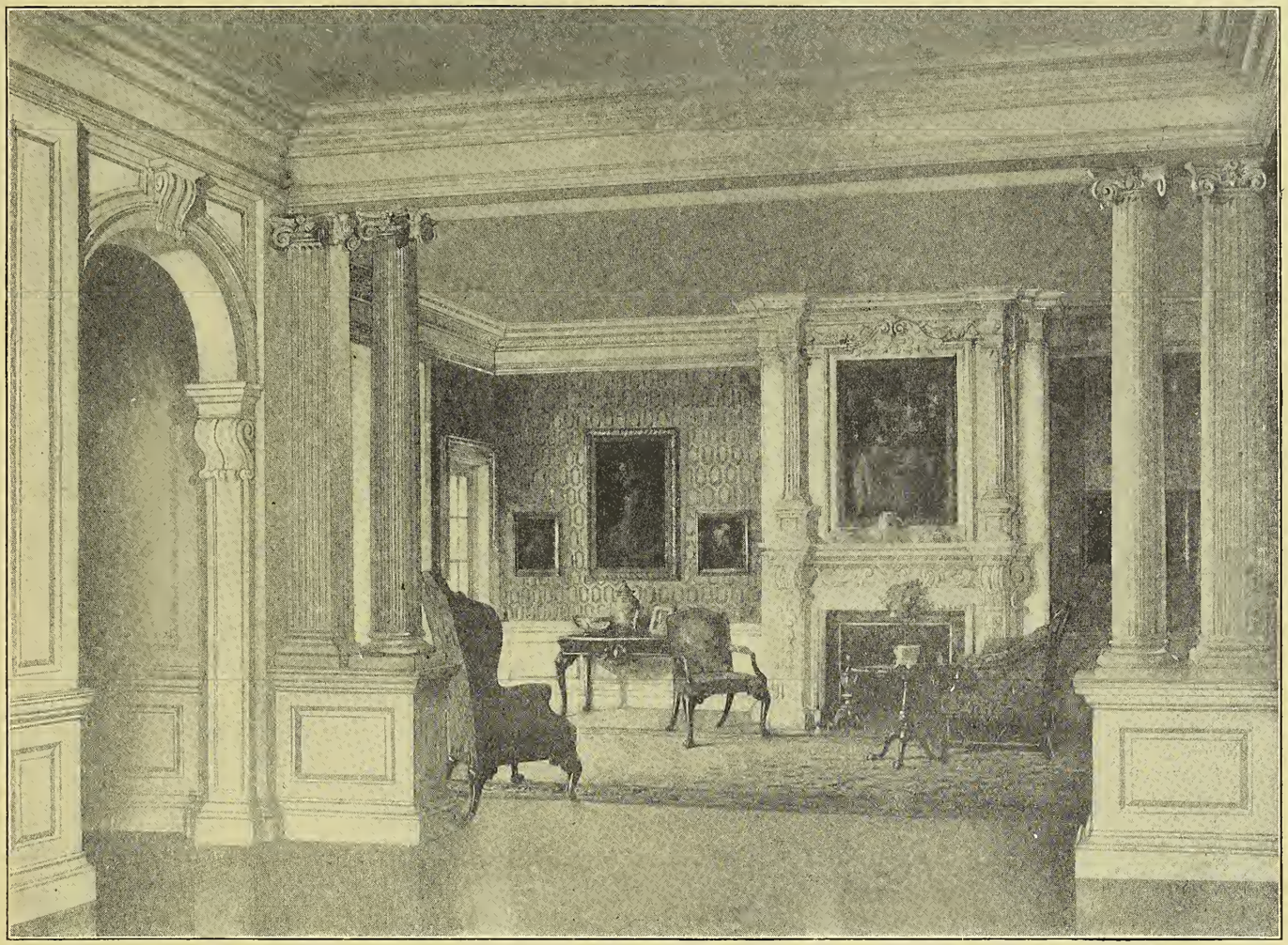
SUGARING-OFF TIME

WHAT a pity it would be if the seasons were lost to us, if life simply rolled on before the same background. To us the tropic's perpetual summer sunshine would be as unbearable as the continual arctic ice. One does not grow old simply by the tale of years; one may often count his youth by them, so why urge that death's-head warning of the Omar school—*Carpe diem*. The seasons' change, our one actual time marker, is not at all a melancholy event. Instead of sadly sighing: "Forty winters old," there would be a joy in smiling: "Sixty springs young." Everything that marks that change to spring is really welcome; worth cherishing. In other days each portent had its celebration apart from the grand festival of Spring's arrival. To-day almost all the festival spirit is left to children while they are young enough not to know any better than to believe in Santa Claus or enjoy the Maypole dance. No, dear reader, we would not dare the eternal ignominy of the twentieth century's direst curse "reactionary!" by suggesting any revival of Nature festivals. What we were approaching was a Spring festival that pays—we are not at all idealistic—in cash. It is the time of Maple Sugaring.

During those days when winter reluctantly retires step by step, often changing his mind and making ugly rushes back again to blow his frosty breath just upon the spot where the discarded camel's hair was thickest; in those fretful, doubtful days of longing comes the sugar season. And when you are in the midst of it you forget awhile, to awake and find yourself plump in the lap of spring with new pleasures due. I scorn the scientific doctrine of the reaction of the body every seven years. One is born anew with the flow of the sap each year. That is Spring's eucharist, the joyful celebration of the reawakening of life in Nature and in man. It gives a stir of new vigor to the woods that is reflected in the bodies of men in a more vigorous pulse beat, in a delight in muscular work.

In the country they still have "sugaring-off" parties. The nights are wintry, but the fire drives away the chill, and there is a light-hearted joviality that no indoor good time ever permitted. To eat the sweet jackwax and stir maple sugar is an annual treat looked forward to and remembered. The excitement of wild games played in the sap bush where the fire cast strange shadows over the icy remnants of winter snow, when seen in recollection appears Olympian. Surely the quality and taste of ambrosia was surpassed by the delicacy of boiling sirup poured on snow.

But it isn't the delicious taste of the boiled sirup or the sugar, it isn't the fascination of the night picnics that gives all the thrill; it is the magic time of the change in season. Even the men in the bush, working in the melted slush with the first warming sun above them, begin to feel it. Whether sap simply typifies this change or whether it infuses the spring vigor of nature, cannot be said, but it's worth while experimenting, even if there is only one solitary sugar maple near you.



The above illustration shows the Entrance Hall and Living Room of a Country Residence, in early Georgian style, designed by W. & J. Sloane

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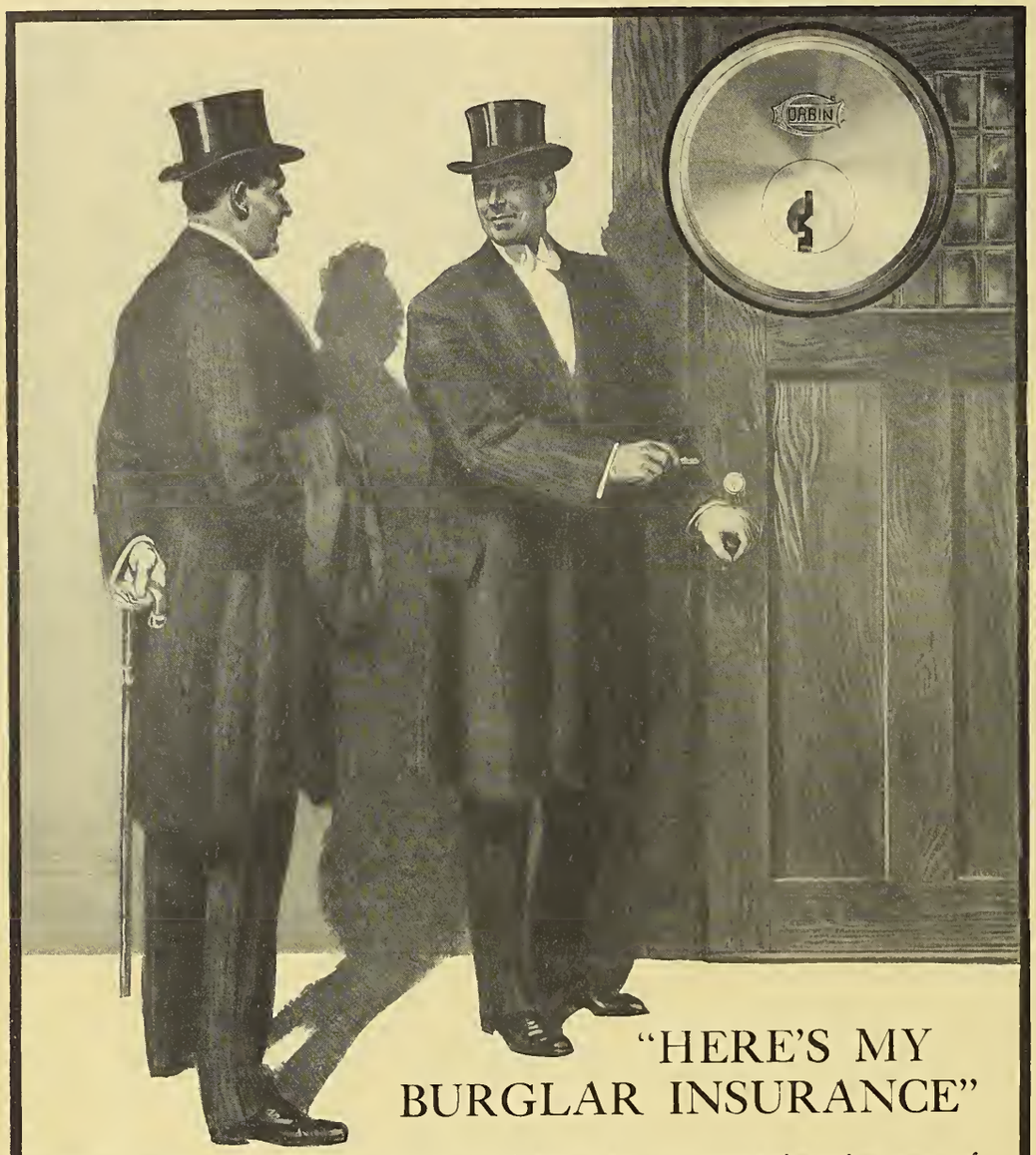
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EDWARD GILLETT, Box B, Southwick, Mass.

The Further Adventures of John Anthony

(*Continued from page* 176)

had it." This year on just two occasions we were able to pick apples on two consecutive days! Rain came always on alternate days and often continued for several when it commenced, despite the "always" of pleasant weather. But Mr. West had opened up a channel of escape for some of my corked-up energy. I scoured the country, gathered in all the available help and we tackled those green apples. A single day brought more than a hundred barrels under cover. The enthusiasm was contagious and trees were denuded at a rapid rate. The next day all hands were on the hilltop at an early hour, and we threw ourselves into the work with the same vim. By ten o'clock it was raining! The next day and the next the wet weather continued. Then it was that the spirit of the orchard failed. My own faith broke down and, as if flashed by lightning, the vim of optimism and cheerful hope went out of that crowd. From that time it was fighting against depression and the work dragged. This is a tale of temporary defeat told because it may save someone else from being wrecked on the same rock. Success depends on the man at the head, and if he fails the enterprise will fail. Never allow yourself to admit failure, or even to think it, for, subtly, it will permeate every department and every worker on the place and the spirit that makes success will be lost. I was sunk in an abyss of gloom when I was lifted out of it by the unexpected arrival of Mrs. John. From that moment things began to pick up, and my sense of proportion came back. Mrs. John had been called away and I had had the fight alone. When she came back, she brought my courage with her, and conditions took on a new aspect. We had some apples up to our own standard, we had many just a little below it and a lot of second grade stuff. Plans had to be revised and methods upset for the marketing of them. My pet hobby of searching out the ultimate consumer with a fancy grade apple had to be largely postponed. So far as we had the apples we sought him. Even as I write this he is sending in duplicate orders for more of those "delicious apples." Prices in the city commission houses were worthless to me for any save high grade fruit, but the local market was wide open for seconds. I filled this up and put in the cellar enough apples to supply the winter and spring demand from the locality. The lessons of learning in an unusual season were high, but the returns nearly reached my first optimistic figures and brought an understanding of ways and means that is worth more than any possible financial loss. Never again can I allow myself the luxury of losing courage. With a crop one-fourth that of last year, I took in half the amount obtained by Hiram the previous season. Modern methods must win out in the end.

Lack of space forbids giving details of the rearrangement of packing house, wagons, picking baskets and methods generally. These were adapted to the conditions existing in my orchard, and without an exception worked well. Others must be made another year, but in this line everyone must work out his own salvation. Right here comes the joy of the problem, for it is constructive work, the building up of an organization that will do more work, better work, and do it with less effort than it has been done before. The various branches of the farm must be planned so as to work together, to dovetail one with the other. Time must be utilized whether it rains or whether the sun shines, always there must be jobs on hand and in mind so that sudden shifts can be made to meet changing conditions. It keeps one alive, alert and active in mind and body. It is to live.



The Hospitable Guest Room

(*Continued from page* 181)

fortable stooping over. Where it is at all possible it is acceptable to guests to find some sort of safe where a lady may put her jewels or a man his valuable papers without having to worry about them. It will avoid the necessity of having to contrive suitable places.

Another great desideratum in a guest-chamber is a spacious closet. If the house has electricity, a light may be so contrived that it will go on as soon as the closet door is opened. The closet should be painted white and enameled inside and above all things it should be kept absolutely unoccupied and free of any of the family belongings or clothing. Too often one finds a guest-chamber closet used by the hostess or some of her family as an overflow receptacle for clothes. A guest-chamber ought always to be kept in perfect readiness to receive a guest, whether one is expected or not, and when one does drop in without warning it does not conduce to a sense of welcome to have some member of the family come and fish out of the closet various things that have been forgotten. The same caution may be added about all drawers in the guest-chamber. In the closet there ought to be either a laundry bag or a hamper, and lastly, some means of ventilating the closet should be contrived where it can be done.

On the bureau or dresser the thoughtful hostess will provide a full complement of brushes, combs, handglass, a pin cushion full of pins, manicure things and all the trifling toilet necessaries. These are particularly essential for the convenience of dinner guests or those who have unexpected occasion to stay over night. It is better that they should be of plain ivory or a substitute of some similar character rather than of more ornate workmanship,

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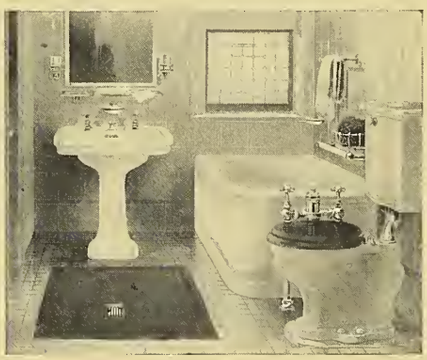
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so that they may be made fresh after the departure of each guest.

If at all practicable, there ought to be an open fireplace for warmth, ventilation and cheer, and on the mantel or somewhere else in the room a reliable clock with an unobtrusive tick and a way of silencing the strike. Some people do not like a clock in the room, so it had better be one that can easily be removed. At the windows it is best to have two sets of shades, the outer dark and the inner light, or else a double-faced single set, light on the side towards the room and dark without. As to the curtains, let them be simple, so that they may be often washed. Broad window sills are not only a boon but a necessity, for guests, time and again, like to spread things out in the sun and air. A French window with a balcony or porch outside, where clothes may be brushed and aired, is a great acquisition. A hardwood or painted floor with small rugs that can be readily taken up and beaten is preferable to a carpet, for then it is much easier to freshen up the room.

And now a word about making the room attractive and cheerful apart from its equipment of essentials. Give the guest-chamber the pleasantest outlook you can—let it be in the front of the house or in a wing quite away from the workings of the domestic quarter. If you are proud of your home you will wish your windows to show the most pleasing part of your surroundings to your friends. As for the room itself, if it can be spacious and airy, so much the better. At any rate, have the windows large and cheerful, so that they will let in plenty of light. If the guest-chamber is on the sunny side of the house, or at least where the morning sun will come in—at which time the guest is more likely to be in the room than later—he will doubtless enjoy the cheery warmth and light.

There are so many charming possibilities in wall-paper that it would be idle to attempt any suggestions beyond recommending that the design be light, simple and restful rather than of intricate pattern. As to color schemes, yellow is always cheerful in a north room and green acceptable in a south room, but here again there are so many possibilities that specific advice cannot be given in this place. Individual taste and conditions must determine the question. There should be few pictures, but those excellently well chosen, and there ought to be little if any bric-a-brac, for as a rule it is superfluous and catches dirt.

Some of the suggestions just given may seem unnecessary because the things suggested are so obviously essential, other suggestions may seem foolish because they deal with such trivial things. The first objection, however, is fully answered by the appalling frequency with which the obviously essential things are forgotten or neglected. All these things people *can* think of, but they do *not*. The second objection is met by calling to mind that it is the little thoughtful attentions, trifling in

themselves, but nevertheless sincere, that make us feel welcome.

The appointing of the guest-room need not be a matter of great expense, as stated before. With a little ingenuity and thought the hints above given may be adapted to individual needs. The main thing is to make your preparations in a spirit of consideration, remembering that the prime requisites of a guest-chamber are that it be cheerful, neat, homelike and convenient. Every hostess wishes her hospitality to be well spoken of and well thought of, and it is by attention to just such little things as those noted above that she is surest to realize her wish. It is not the mere material creature comforts that most please the guest, but rather the consciousness of welcome conveyed by all the little gratifying evidences of thought that has prompted attention to the minutest details.



The Proper Use of Dwarf and Standard Fruit Trees

(*Continued from page* 184)

furnishing apples for cooking and winter use, such as Baldwins, and depending upon the dwarf trees for a more limited quantity of extra choice fruit for dessert purposes.

From all this it may be seen that there are plenty of real uses for the dwarf and semi-dwarf trees, but no one should attempt their raising who is not prepared to give them proper conditions for growth and devote to them the necessary amount of attention and care.

Generally speaking, fruit on dwarf stocks may be grown where standards of the same variety are successful. One condition which all fruits require in standards as well as in the dwarfs is very thorough sub-drainage. Most of them will stand a great degree of cold, but a wet season is apt to prove fatal either to the crop or to the trees themselves.

Unless the trees are to be planted in a garden soil already rich, holes should be dug out to a considerable size and old, very thoroughly-rotted manure mixed through the soil before it is put back into them. If the trees are to be set in a row along a wall or a trellis, it will be better, instead of making individual holes, to prepare a trench or broad, deep furrow in the same way. Where the trees are to be grown against the wall two things must be avoided—although in Europe they do not have to pay attention to them because of the difference in climate. Do not plant them against the wall, but a foot or so from it and trained on a trellis, for in our hot summer sunshine the wall surface becomes so heated that it might be injurious to the branches trained against it and also training the limbs a few inches away from the wall gives more opportunity for a free

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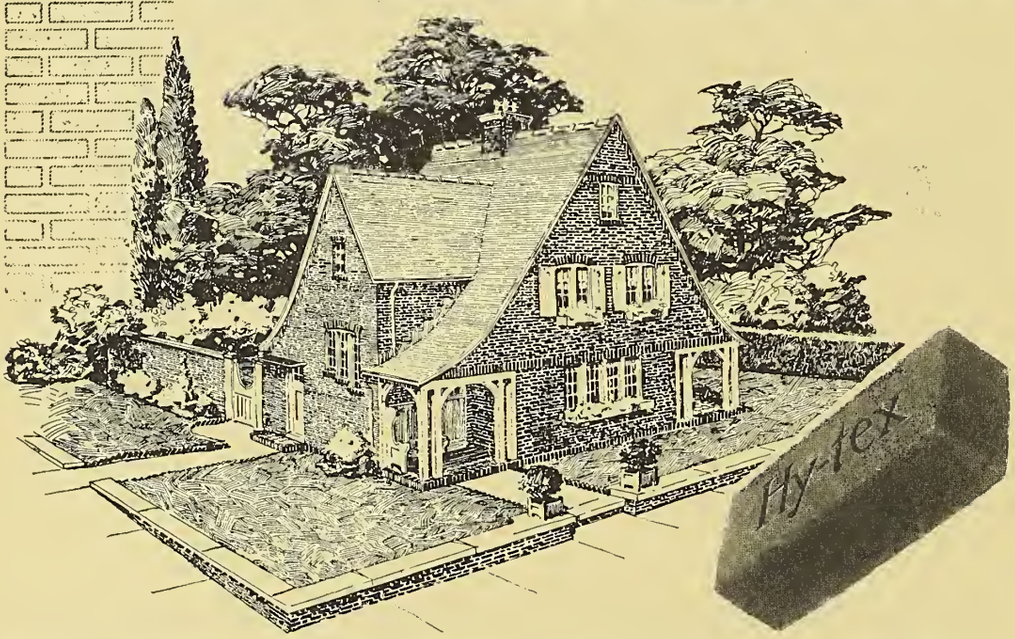
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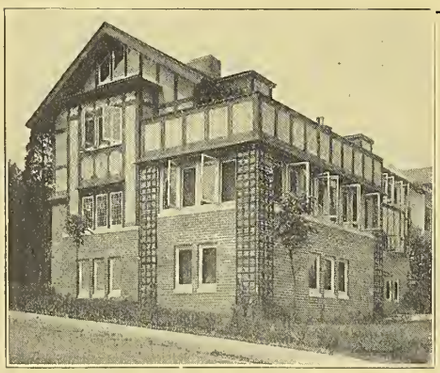
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circulation of air and the proper application of sprays, etc., to all parts of the branches. If possible, don't train along a wall facing south, as in such a location the trees are pretty sure to start into bud prematurely in the spring and be injured by late frost. Where an exceptionally warm and sheltered location of this sort cannot be avoided it will be necessary to counteract the effect by sufficient mulching. I have a friend who has done this successfully by giving a big mulching of leaves and corn stalks around the base of the trees after the ground has become thoroughly frozen in winter and by shading the trees themselves from the warm early spring sun by pine boughs woven into a temporary rough wire trellis. This mulch is removed in the spring to allow thorough cultivation, but again spread on toward the end of June to conserve the moisture during the hot, dry mid-summer weeks. The trees should be so planted and arranged, especially in a garden where the horse and cultivator are used, as to allow continuous cultivation in one direction. That is, they should fit in with the rows of asparagus, small fruits, strawberry beds, etc., of a more or less permanent character, in order to make their cultivation as convenient as possible.

In buying the trees it should be remembered, as stated above, apples to be dwarfed are budded on either Paradise or Doucin stock. Pears are budded on quince stocks. Peaches are made somewhat smaller when grown on plum stocks. Plums are budded on Pumila or on the sand cherry, and cherries on Mahaleb stock. Apples and pears are, of course, the most important, and fortunately the best suited for growth in this way. Trees should be bought only from some nurseryman whom you have every reason to believe is reliable, as there is even more chance for you to be deceived on dwarf fruit trees than on the standard stocks. If you insist upon ordering from the itinerant fruit tree agent, it is more than likely that you will either get inferior stock or pay superior prices—or do both. Your fruit trees should be ordered early, but the best arrangement about shipping is to have that left to your instructions later, allowing proper time, of course, for transportation from the nursery to your express office, arranging to get them there as shortly after you have the ground prepared as possible, but not before. As far as possible try to select varieties which you know will do well in your own locality, on standard stock. If you have any doubt as to these and cannot find out from some nearby fruit grower write to your experiment station. Or if you cannot wait to do that, call them up on the phone. It may save you several dollars.

In planting the trees, after receiving your "stock," put it into the soil that has been prepared for it as soon as possible, being careful while you are doing so not to leave the roots exposed to wind and sun even for a short period. If for any reason it is impossible for you to plant the

trees at once, "heel them in," by digging a shallow trench in a shaded place, packing them closely into it and covering the roots with earth. In this way they will keep in proper condition until you are ready to use them. In planting, the trees should be set fairly deep, so that the point of union between stock and bud will be between three and four inches below the surface of the soil. In planting, the trees should, of course, be set very firmly into the soil, and the same raked smooth and fine on top after the operation is finished. Planting may be done in either spring or fall, but as a general rule, north of Philadelphia, it would be better to undertake it in early spring, especially where only a few trees are being set out, so that they can be carefully looked after and mulched during the first season.

The amount of space available and other local conditions will determine whether you want to grow the trees in their regular form or train them near a wall or upon a trellis. In the latter case, the growth is induced to take a lateral form, as far as possible. Even with dwarfs the results will depend very largely upon the thoroughness with which the pruning is done, especially in the early stages of growth. To induce the pyramidal form of growth, which is usually the best for dwarf trees, it is necessary to cut back the main shoots or "leaders" quite low down, thus inducing the more vigorous growth of the side branches, and leaving the tree with an open center. At the time of planting they should be shortened back about one-third in the usual way, and as soon as they become established the centers should be cut back to a height of from ten to twenty inches. If vigorous growth is made, these side branches should be headed in, leaving four or five shoots on each. These will, of course, tend to an upright position in making their growth. The following spring these shoots should be cut back severely—one-half will not be too much if they have made a vigorous growth—and in case they should be too thick remove some of the side branches from which they sprout. This severe pruning should be continued for three or four years, and the shoots should be gone over annually, early in the summer. All branches that crowd or cross should be cut out, and all those that seem to be making too vigorous growth should be headed back in order that the tree may be kept symmetrical. For best results in the fruit there should be free access of air and sunlight to all parts of the tree. Each spring, the annual growth of the year before should be cut back a third or more, as may be required to keep the trees in shape as small as desired.

Where the trees are to be trained upon the trellis, a somewhat different system has to be used. In the first place they should be planted almost directly under

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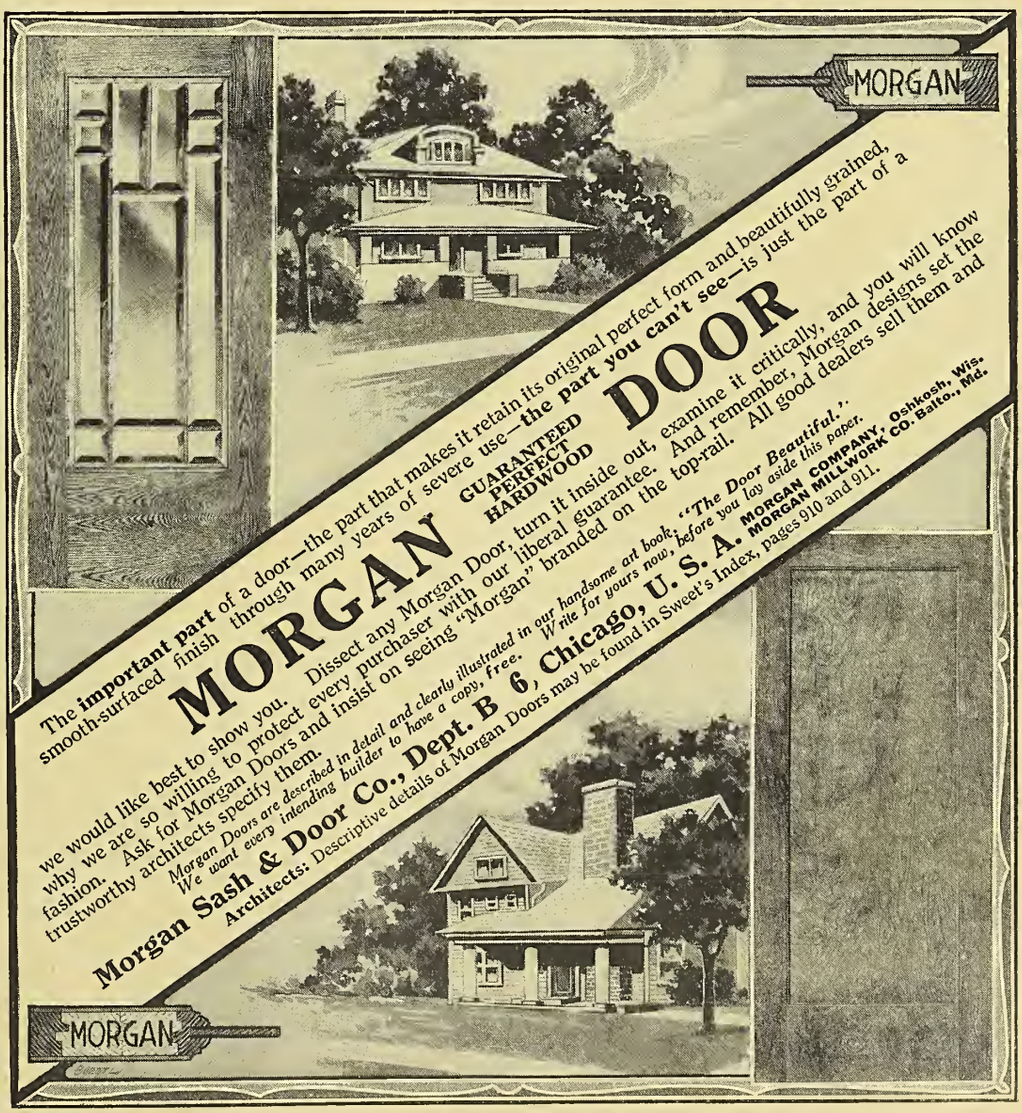
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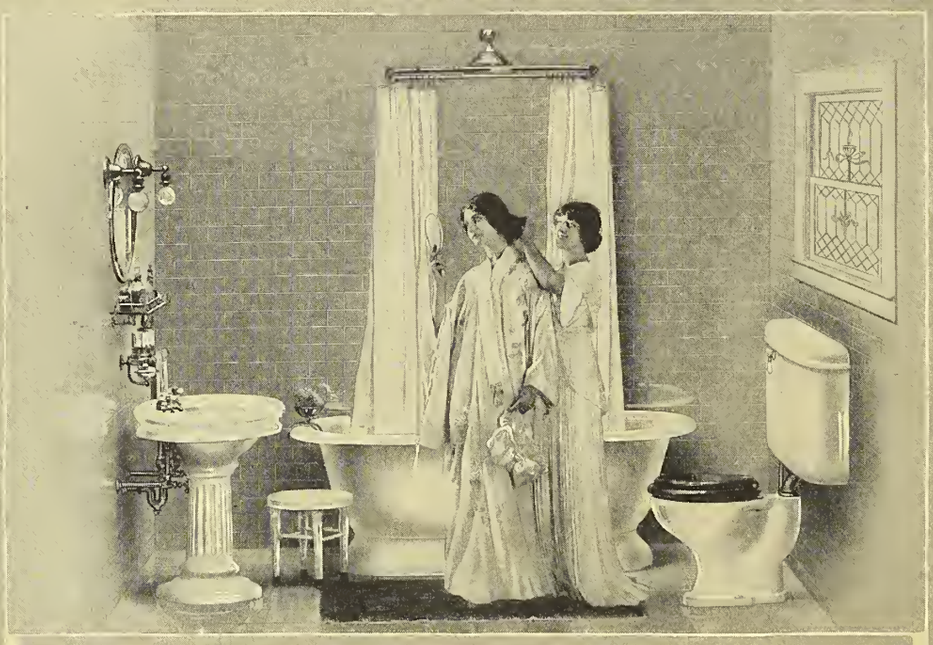
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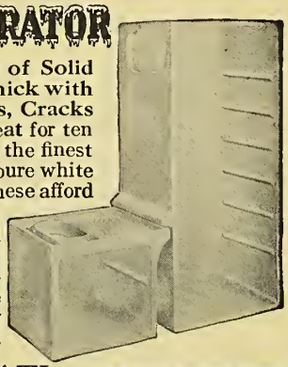
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it, that is, so that the main trunk will grow close to the wires and not several inches away. After planting, when growth starts, the main trunk should be cut off a few inches above the first wire and three buds allowed to develop. One of these is trained along the wire on either side of the trunk and the third encouraged to make an upright growth as far as the next wire, where the same process is used; that is three buds are left here, two of which are trained in either direction on the second wire, and the third bud which should preferably be on the opposite side of the trunk from the one below it, up to the third wire, etc. The shoots which start from the lateral branches should be kept cut back to four or five inches, saving only one out of every two or three so they will not be too close together. Every spring, as soon as the buds are well started, all those which are not desired should be rubbed off before they make any considerable growth, as this is not only very much easier but also saves the strength of the tree for the growth which is retained.

As regards the general care of dwarf fruit trees they are not very different from the standards except that in order to be at all successful they must be given excellent care in every way and that it is generally necessary to thin the fruits; an operation which as far as standard trees are concerned does produce better results, but which is not usually attempted on account of the difficulty of doing it thoroughly. With the dwarf trees, however, it is not only necessary, as they have the habit of setting two or three times the fruit which they have strength to develop—but they are much more easily thinned, as most of the fruit spurs may be reached from the ground or at the worst from a step-ladder. The thinning may be accomplished by removing part of the fruit spurs, or a half or more of the fruits themselves after they have set and made some growth, which will be before the first of August.

Not only should the soil be made rich before the trees are set out, but they will need yearly attention in the matter of fertilization thereafter. As with standard fruits, green manuring with clover or some leguminous crop, especially during the latter part of the season, will be beneficial, and the soil should not be allowed to lack in potash. When there does not seem to be a rapid healthy growth in the spring a light application of nitrate of sōda will usually be found of great service. Above all things the spraying must not be neglected, and where it is so easily accomplished, there is absolutely no reason for doing so, especially with efficient ready prepared sprays of various sorts which are now to be had from many sources. Before using any of these, however, I would strongly advise the fruit grower to get the report of his experiment station

upon spraying and sprays in order that he may see for himself from actual and carefully tried experiments what preparations are likely to give the best results. The percentages of efficiency obtained from the various preparations are sure to prove not only an interesting but in all probability, a money saving study.

The growing of dwarf fruits offers one of the greatest fields for the development and use of the skill of the amateur; and the rewards which he may obtain therein for his labor will certainly be among the most highly prized.

Ornamental Tub Plants

(*Continued from page* 178)

half pound of alum lumps to a bushel of soil being the simplest application. Iron filings treated with muriatic acid is another method.

Good turfy loam well enriched with well decayed cow manure suits them as to soil, and an open, sunny position in summer. In winter the hydrangeas should be stored in a light, cool cellar and given only enough water to prevent the roots drying up; in summer water should be freely supplied.

The lantanas are remarkable bloomers showing many attractive shades of color. They make neat, symmetrical plants, usually as broad as high and continue in bloom the entire summer. They are of the easiest culture and do best on the east side of the house where they have the morning sun. In winter the plants may be stored in a frost-proof cellar and treated much the same as hibiscus, requiring rather more warmth than the hydrangeas.

The lantanas are easily raised from seed which should be started in flats in the house or green-house early in March and potted when the plants have two pairs of leaves. They should be shifted rapidly from pot to pot as they fill them with roots until the time comes for putting them outside, when they may be given a twelve-inch pot or larger and will soon be in bloom. I have raised from spring-sown seed plants which by mid-summer were two feet or more in diameter and covered with a mass of flowers.

The Epicure in the Garden

(*Continued from page* 189)

The mushroom house is a shed set against the side of a north wall, and a hot-water pipe, used only in severe weather, however, goes through it. The bed is composed of good horse-dung and loam, and is renewed from time to time when one lot of spawn seems worked out. Roots of rhubarb and chicory stand on the floor



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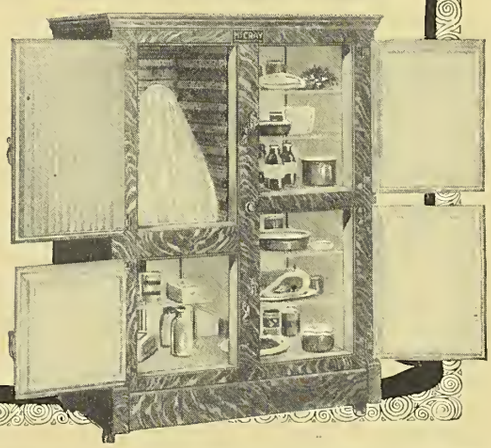
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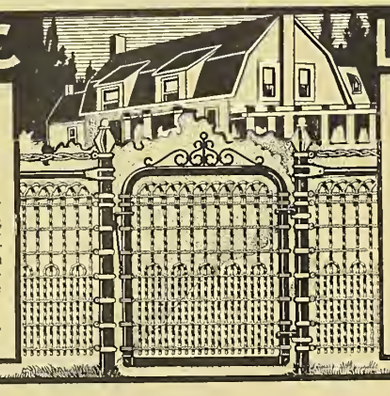
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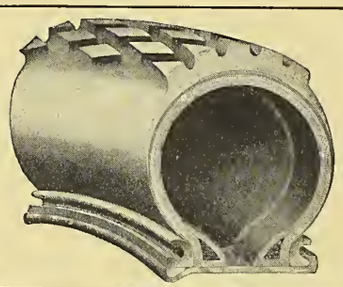
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here, covered with upturned barrels, when needful, for blanching. Here also I make experiments with blanching dandelion for our first spring salads.

As to the commoner kinds of vegetables—carrots, turnips, onions, and the like—we manage them somewhat after this fashion. Early carrots are sown in the hotbed in the last week of February, and after thinning out we have them ready for the table by the beginning of June. The usual spring sowings are also made out of doors later. In August we sow the Scarlet Horn in a warm border, thin out in September, and have them left in the ground all winter, so that when pulled they are crisp and fresh. Turnips fare much the same, but as we value the tops almost as much as the "roots" we sow them more liberally. One crop of parsnips is raised in the summer and stored in the ground for the winter.

A few beets of the Globe variety we grow in a frame for those special dishes which Charlotte prepares so daintily, but the row of beets for salad purposes and winter use make their growth in the usual way. We are experimenting with a variety called the Seakale Beet, and have succeeded in rearing some fine plants; these make a delicious dish when cooked after the manner of ordinary seakale. The upright fleshy stems are stripped of their leaves, and the stalks have a very pleasant mild flavor.

Chicory is sown in the open ground in May, and the roots lifted and taken into the mushroom house in November. The roots themselves are never eaten, but they quickly make a top-growth, and if this is produced too fast it is checked by taking them to a cool cellar.

The cauliflowers, which we sow out of doors in August, are protected with lights, so as to have them ready for cutting at the beginning of November. Those which are frame-sown in spring, and planted out in the open in May, give us a supply for the summer. Of onions we grow only small varieties, sowing a fresh pinch of seed very frequently, as Charlotte, wise woman, eschews the use of large onions in her cookery, and in winter she will have only shallots. To please her we also grow a little garlic, but I have to watch warily lest the susceptible nose of the Better Half be ever offended by an over-dose of the pungent aroma. It is but rarely that she proves indiscreet. We, on the other hand, are very partial to the delicate flavor of chives, and constantly desire her to use the herb; also we praise her warmly whenever leeks are introduced, and, indeed, we think there are few things nicer than a dish of fine white leeks with a creamy sauce. Charlemagne is an expert in the production of good leeks; he loves nothing better than to sit on an old stool snipping and cutting young leeks for planting out, and takes great unction to himself when he has set out a row, regimentally precise, in a trench.

Another delight of his is to bring me a perfectly-shaped lettuce, Romaine or Cos,

when it is well blanched and firm of heart. Such are not so easily cultivated as one might imagine, for they call for patience and exactitude, but Charlemagne considers himself an example of both these virtues. Endive he troubles less about, and thinks it sufficiently well cared for if covered over with an empty flower-pot, while Batavian endive he utterly despises. But, then, he has never been in Dutchland, and I have.

Dwarf peas we sow in pots and place on the greenhouse shelf early in January. As soon as they have made a fair growth they are brought lower down, and are kept well fed with liquid manure and then staked. Successive sowings take place in the warm pits, and from the beginning of May until the outdoor ones are ready in July we are able to gather a good dishful of peas each week.

We have proved that French beans could be grown pretty well all the year round, where a temperature of sixty degrees can be maintained, but we have not found it needful to keep them going all winter, as before the frosts come we pick a quantity and salt them down in large earthen crocks, putting a layer of salt and one of beans alternately, then filling the crock with water. The brine is occasionally poured off and renewed. If the beans are taken out and washed, then left to lie in cold water for two or three hours before cooking, their flavor is very little inferior to those just gathered from the garden.

Salsify, celeriac, cardoons, maize, and a great variety of dried beans and lentils we keep by us in the storeroom in winter; nearly all of them have been grown on our own land. A bagful of chestnuts comes to me every year from Italy, and very delicious is the *purée* which they make, also the dessert of boiled and peeled chestnuts eaten with sweetened cream.

Since Charlotte has revealed to us what delicious soups pumpkins can provide, I am amazed that so few people grow them. They keep moist for a long time when hanging in the storeroom, and this golden *purée*, garnished with crisp morsels of fried bread, is a welcome sight on a cold winter's day.



Gooseberries and How to Grow Them

HARDY, useful and easy of cultivation in almost every district, gooseberries are worthy of the most careful attention. They are often planted closer together than is advisable, and are left either unpruned or pruned carelessly. The former mistake can be readily corrected, even in a row already formed, but the latter is more difficult to deal with, especially after a few years' neglect. In the case of gardens from which some revenue is to be de-

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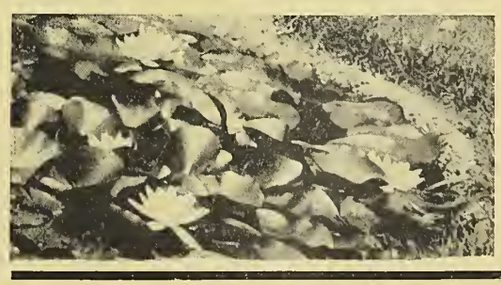
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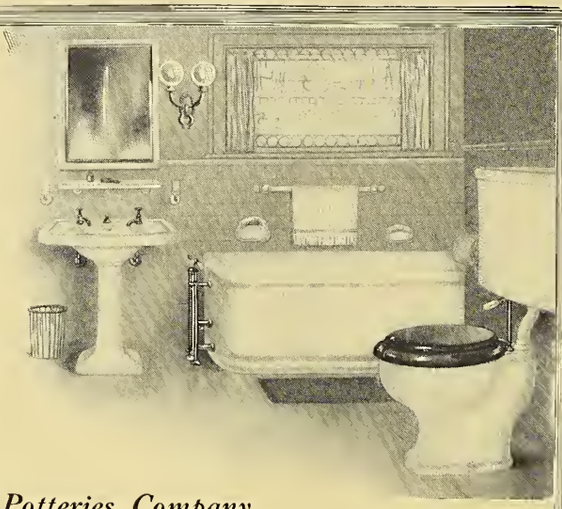
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rived, the chief question to be settled is whether the extra fruit secured in the early years will pay for the sacrifice of a number of the bushes later on, when thinning becomes necessary. Thick planting also demands consideration as to whether the land is in a sufficiently clean condition to render it a safe proceeding. If gooseberries are put out four feet apart in very large gardens, horse labor can seldom be utilized in the destruction of weeds and surface cultivation, and this means additional expense or an equally serious neglect.

On the other hand, if a distance of six feet be allowed, both between the rows and plants, either in a garden, farm, orchard or market plantation, the bushes will have ample space for development, and the usual operations can be performed economically. Besides this, the intermediate spaces can be devoted, if necessary, to vegetables and flowers, or, where the position is favorable, to strawberries—at any rate, for the first two or three years. There is a marked difference in the growth of varieties. The advice here given refers only to those of good habit which are most extensively cultivated. The weakly varieties, some of which are included in garden collections, may be planted three feet apart, while the restricted forms, like upright cordons, require still less space whether trained to walls or wire trellises.

The chief point is to secure a well-furnished bush with seven or eight main branches radiating and rising equally from the main stem, allowing sufficient space between these to permit the free admission of sun and air, and enabling the fruits to be gathered easily from any part. Sufficient young growth must be retained to provide for the due extension of the bush, and all beyond this should be removed, particularly in the central parts, as well as all suckers from the base, which are apt to be a constant source of trouble if there is no stem clear above the ground level and the original cuttings were not rightly prepared by the removal of the lower buds.

The gooseberry thrives in indifferent soil, provided this be not dry or poor, nor excessively heavy. In every case it should be thoroughly cultivated and drained previous to planting. But there is one matter which is of critical importance, and that is the provision of suitable manure. Old well-stored stable or farmyard manure dug or plowed in before planting time is the best preparation, and from ten to fifteen tons per acre, according to the character of the land, usually give the best results. Such applications can be supplemented later on by surface dressings each year of similar manure, or by a mixture of superphosphate of lime and kainite in equal parts at the rate of four hundredweight per acre, alternately with the organic fertilizer. If growth is deficient, nitrate of soda in the spring, as the buds are starting, is helpful; about two hundredweight per acre are sufficing as an extreme dressing, and less often answers the purpose. Judgment must be exercised in the

matter, however, for while ample crops of fine berries are desirable, undue luxuriance of growth is not advantageous.

The worst enemies of the gooseberry are the caterpillars of the magpie moth and the sawfly. Constant watchfulness for the first appearance of each is important, and equally prompt action in the direction of destruction, dusting with hellebore powder being a simple and effectual remedy. The mildew affects the leaves and attacks the fruit.

For spraying the bushes before the buds open diluted Bordeaux mixture is suitable, but after the leaves are expanding, liver of sulphur dissolved in water may be used at the rate of one pound to forty-eight gallons of water, reducing the water to thirty gallons should a second application be needed. Birds are always troublesome in gooseberry plantations, attacking the buds with frequently serious results. Late pruning, netting the bushes, or running strands of black cotton across them (which can only be done in gardens), and spraying or syringing the plants with lime or other washes are various means of decreasing these attacks, in addition to the use of the gun.

In small gardens trained gooseberries, now obtainable in most nurseries, are useful and convenient, being well under the control of the cultivator, and if it is desired, a large number of varieties can be grown in a limited space. Furthermore, they can easily be arranged in one part of the garden where protection can be provided against birds, etc., by netting the whole quarter, allowing space for a man to attend the plants or gather the crops at any time. The best form is the upright cordon with three or four stems, the latter being like the so-called "gridiron" trees of larger fruits. W. R. Gilbert

Hints for the Suburban Poultry Raiser

THE suburbanite who would renew his flock of poultry has recourse to any one of three methods. He must buy full-grown pullets ready to lay, or young chicks and raise them himself, or he must hatch and rear his own. He who would be independent and get some real pleasure from the care of his flock also, must choose the last-named method.

If one has but a small flock—say a dozen or fifteen fowls—it is hardly profitable to use an incubator, considering the attention, expense of running and the cost of the machine. One can use two or three broody hens from time to time and let them save the time of the busy man who must count his minutes while home.

Hens—not pullets—that have been laying briskly all winter will show signs of broodiness in the spring—say in March



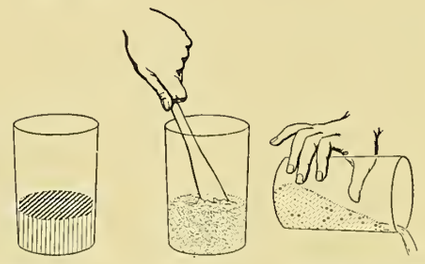
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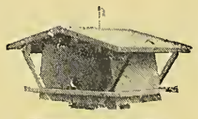


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and April. That is early enough to prepare for the advent of the young chicks unless one has an evenly-heated apartment for their care.

The broody hen proclaims her desire for progeny by persistently setting on a nest which may contain eggs or nothing.

The location of the nest is a matter of personal selection. The hen knows where she wants to set, and is frequently too "spunky" to set anywhere else. Madame will often leave a properly equipped nest for one of her own selection. It often pays to consider the whims of a broody hen, and to accord with her rather than to oppose her. She wants seclusion, good nesting material, room to turn in, and the privilege of shaping and arranging her nest. Let her have a day or so to adjust herself before giving her the eggs. When she has settled down and will peck and ruffle up when approached, she is at home. Give her thirteen or at most fifteen eggs for a medium-weight bird. If she contentedly bills them under her feathers, all is well; but if she acts dissatisfied and refuses to cover them, she will probably prove inconstant and it will be better to give them to another hen.

Aside from a regular supply of corn and water, and a convenient sand bath as well as a supply of grit, no other care is needed by a setting hen.

Where several are setting at the same time, it may be necessary to devise some means to prevent their interfering with one another. Sometimes a hen will want to go into partnership or trade nests with another hen. Individual compartments from each nest, provided with food, etc., and covered with wire slats, will save trouble and loss of eggs.

As soon as the eggs begin to hatch, some supervision is necessary. Discarded shells should be removed, as they sometimes get over the hatching eggs and prevent the emergence of the chicks. The hen must be kept upon her nest until the hatch is over, which is about a day and a half or two days from the time the first shell is pipped. The chicks need not be fed until they are strong enough to leave the nest.

M. ROBERTS CONOVER



Selecting Eggs for Hatching

SUCCESS in hatching chicks depends to a great extent upon the eggs, which should be selected with intelligent care and kept under proper conditions until enough have been accumulated to fill an incubator or to start several hens setting at the same time. During cold weather the eggs should be gathered every two or three hours, or they may become chilled. Only those which are well-shaped, of normal size and an even color should be chosen for incubation. Brown eggs and white ones ought not to be used in the same ma-

chine, for the former have thicker shells than the latter. Eggs which have chalky shells must be discarded for best results, and dirty eggs are best thrown out, although they may be washed, if of considerable value.

Two weeks is as long as eggs should be kept before they are placed in a machine or under a hen, and during this time they ought not to be kept in the light or in a very dry place, and the temperature should not go below forty or above sixty-five degrees. Evaporation is prevented to a large extent by putting the eggs into a metal bread box with a tight-fitting cover. Another plan is to wrap them in flannel or to stand them in a box of bran or oats, with a woolen cloth over them.

Much depends upon the hens which lay the eggs. It is poor policy to set eggs laid by hens which have been forced hard all the season. Such eggs are not likely to be fertile, or if they are fertile, to hatch robust chicks. A better plan is to make up a small breeding pen in the fall, and not force the hens for eggs.

Eggs laid by deformed hens or those lacking in physical vigor or the characteristics of the breed they represent should not be set. Like begets like, and it is an easy matter to allow the flock to become decadent by neglecting such matters.

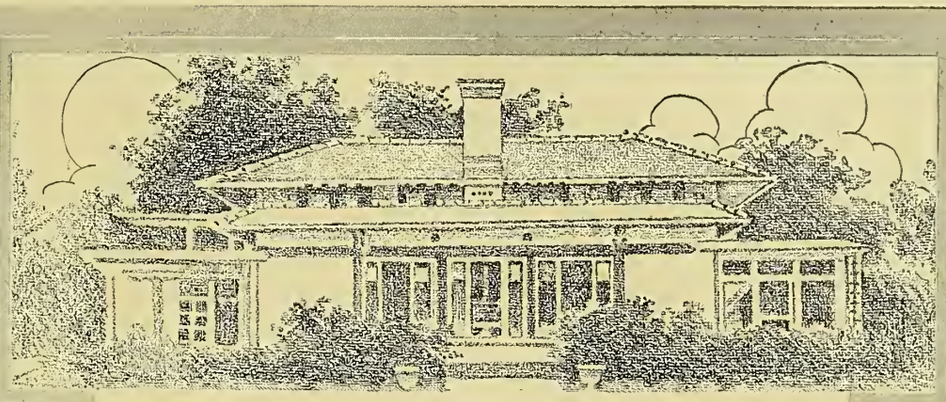
A general rule is to breed from two-year-old hens and cockerels, or from mature males mated with pullets. In actual practice, the first plan seems to give more satisfactory results than the other, although theorists fail to understand why.

Some breeders believe that an excess of pullets is hatched when this practice is followed, while more cockerels are hatched when a well-matured male bird is used with pullets. The logical conclusion is that when the birds of both sexes are the same age an equal proportion of pullets and cockerels result from the mating. This matter makes an interesting study.

In order to make sure of fertile eggs, none should be saved until three days after the breeding pen has been made up. Eggs laid up to the tenth day after the male has been removed will be fertile. It is an excellent plan to allow two males to each breeding pen, alternating them weekly. Two cocks ought not to be allowed to run with the hens at the same time. All the birds should be allowed free access to a hopper of beef scraps and green rations of some kind, as well as an abundant supply of wheat and cracked corn, thrown into the litter, so that they will be obliged to exercise in order to get it.

By following these few simple rules and by giving care to the selection of fertile eggs—which is a matter of far more importance than many owners of hens realize—there will probably be little cause for complaint about difficulties in hatching. The successful chicken-raiser bears them in mind, and the beginner who follows his example will find the results most gratifying.

E. I. Farrington



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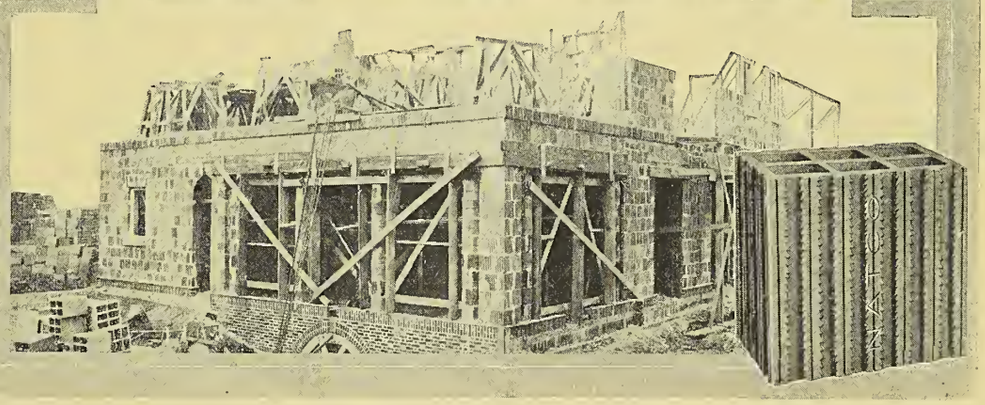
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March Activities in Southern Gardens

EDITOR'S NOTE:—*To meet the needs of our southern readers, the department, beginning with this number, devoted to the problems and interests of southern gardens, will be continued from month to month.*

THE women of other sections of our United States may cover their gardens with wrappings of brown leaves and let them sleep all the long winter through tucked away in warm blankets of soft white snow, but not so may Southern women rest from their labors. Their gardens must be kept in blossom all the year. The violets and tea-olives come with Christmas; January brings narcissus and snowdrops; February wakes the hyacinths, the multi-colored japonicas and the pearly camellias, and, by the time the March winds blow, the garden is in its early spring attire.

March is preëminently garden-waking and garden-making time in the South. The lawn has to be made, if it was not done in the fall; the seed of salvias, verbenas, and antirrhinums must be planted in boxes, and also the vegetables, tomatoes and peppers. In sunny situations, where they are to bloom, are placed the seed of dwarf nasturtiums, morning-glories, dwarf helianthus, ageratum, sweet alyssum, larkspur, and marvel of Peru. For either sunny or shady spots are the zinnias and hyacinth beans.

The gladioli and dahlias require full sunlight, and should be planted as early in March as possible, as should also the roses, which ought to have been put out in December or January, but will well repay the later planting. On March Fourteenth last year, I planted fifteen roses, from which I cut many flowers during the summer. They were the Frau Karl Druschki, most glorious of white roses, the Etoile de Lyon, the beautiful yellow, and the Killarney, clearest and most exquisite of pinks. Planting five of each variety enabled me at any time to cut enough of one color for a vase or bowl—a most desirable thing to be able to do.

Sea Island yuccas, cannas of all kinds, shasta daisies, veronicas, and *physostegia virginianas* grow equally well in sun or shade, and planted early in March form invaluable aids to garden beauty and bloom.

The wistaria, *rhynchospernum jasminoides* or star jessamine, *clematis paniculata, hydrangea grandiflora,* and roses, having had a fall dressing of manure, appreciate a spring portion of bonemeal and potash. For the lawn, nothing is better than cotton seed meal at this time of the year.

Of the salvias, "Ball of Fire" and "Bonfire" are most reliable and satisfactory, both as to quality of bloom and length of time of flowering. The salvias can be depended on in any situation, whether sun or shade, provided that the soil is rich.

The Mammoth verbenas, white, pink,

and scarlet, are my favorites, and of the antirrhinums, the giant white, pink and garnet.

Asters make stronger plants when the seed is sown in the sunny borders where they are to bloom, although they grow fairly well in partial shade. If the early-branching and the late-branching kinds are used, a succession of many weeks of flowers may be secured. My preference is for the white, pink and pale lavender of the above varieties, and nothing that grows in my garden gives more beauty and satisfaction.

The zinnias, as we now know them, deserve a place in every garden. I plant both giant and dwarf varieties, and, to avoid clashes of color, use only white, crimson, flesh and salmon pinks, and I glory in their rich luxuriance from early May until late fall. If kept well cut, I know of no more effective summer flowers.

Cannas in the South do not have to be taken up in the fall, and they multiply so rapidly that care must be exercised in placing them lest they overrun their more delicate and less obtrusive garden neighbors. Naturalized in the lawn, against fences, planted in clumps in chimney corners, or where a temporary screen is needed, they make a rich and beautiful background. Careful attention must be given to color, however; for, while hedges of either yellow or red varieties are good, those of mixed colors are rarely ugly. For a screen, the tall kinds are best, while, for a low hedge or clumps in the perennial borders, the dwarf kinds are to be preferred. A hedge of tall yellow cannas, with masses of dwarf helianthus in the foreground, glorified an ugly division fence in my garden for many months last year.

The Stone tomatoes and the Chinese giant peppers, if planted in early March, are ready for transplanting in late April, and give excellent results in very limited space. Radishes planted in the open are ready for the table in early April. If garden areas permit, free planting of all the early vegetables should be made at this time.

First in my summary of garden operations for March, I mentioned the planting of the lawn, and again, because of its importance, I emphasize the sowing of the grass plot. Have the soil deeply spaded, thoroughly enriched, plant the most carefully selected evergreen lawn grass seed, and in the fall it will be necessary only to reseed in order for you to have from March to March a turf that is green and rich and beautiful.

When the seed are all carefully packed away, the bulbs and roots planted where they should be, there is time to breathe in the fragrance and enjoy the beauty of the March blossoms. My garden book shows that, for three succeeding years, March winds have brought to me the spicy sweetness of the hyacinths, and have opened the golden bells of the daffodils and the rich cups of the iris and tulips. March comes in laden with the breath of violets and goes

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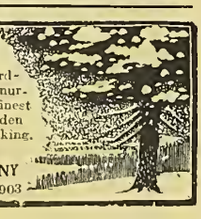
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out shaking the snowy petals of the spireas, lighting the flaming torches of the fiery cydonias, and scattering sunshine under the long stems of the fragrant yellow jasmines and dainty banksia roses.

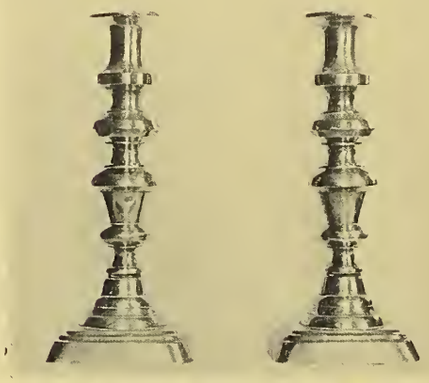
JULIA LESTER DILLON

The Collector's Corner

Colonial Candlesticks

THE genuine antiquity of the pair of massive brass candlesticks shown in the illustration is not a matter of mere conjecture, for they were neither a dubious "find" in an out-of-the-way place, nor a product of the ubiquitous antique shop. They were recently left as a legacy to a Virginia woman by a venerable neighbor, the last of her line in a community that contains Washington homes, Washington heirlooms and so many other interesting relics of a historic past that nothing under a hundred years of age is worthy of consideration as an antique.

The candlesticks, of excellent proportions and graceful outline, are eighteen



A Pair of Genuine Colonials

inches high, and like everything else manufactured of brass in those primitive times, are extraordinarily heavy and solid in construction. Their bases, if nothing else, are proof positive of their Colonial origin. Neither circular nor square, as are the bases of modern candlesticks, they are rectangular in shape and seem quite small and out of proportion to the size of the candlesticks themselves. Mantel shelves in Colonial days were so very narrow that nothing with a stand more than three or four inches wide could be placed on them. Candlesticks therefore, no matter how elaborate or massive they might have been, were of necessity made with narrow bases in order that they might occupy the conspicuous places for which they were planned with a small amount of space.

The Vital Functions of Light in the Home

(*Continued from page* 171)

When one is purchasing, look into reflectors, which are usually placed over the lamp, which is in a vertical position. If they have the blinding glare of the automobile headlight, and are filled with streaks and lines of painful brilliancy, avoid them, or insist that they shall be furnished with depolished *inner* surfaces.

Dr. Percy W. Cobb, physiologist for one of the tungsten lamp manufacturers, states: "In the case of prismatic reflectors it is only when they are so far away that the eye is unable to distinguish their individual surfaces, that there is any reduction in intrinsic brilliancy, significant for the protection of the eyes."

The danger of polished surface reflection is one of the ills attending the advent of our light sources of high intrinsic brilliancy. When light strikes a surface one of two things happens,—it is *reflected* or *diffused*. If the surface is polished or glazed, no matter of what material it may be or in what form, when light impinges upon such surfaces it will be sharply reflected—often directly into the eye, causing glare and eye strain, with all its attendant miseries. Who has not experienced the necessity of shifting the position of the glazed reading page to avoid the glare? Does the position of the *depolished* page of the newspaper, for instance, require shifting? Every impinging ray of light is diffused by its unglazed surface—scattered and disseminated so perfectly that eye strain is eliminated, and eye comfort prevails. Avoid polished surfaces wherever possible,—always in case of inner surfaces of pendant lighting shades, which are shaped so as to disclose the illuminant and its secondary reflecting surface. All glass manufacturers can furnish glassware depolished on the interior. Insist upon their doing so.

And now to revert momentarily from the physiological to the esthetic,—at best but a brief interval to span,—let us consider the use of light in making the home attractive. Referring to the illustration at the lower portion of page 169, a reconciliation of light and decoration is seen. First there is a small art lamp beside the piano. Against a dark green wall of practically neutral color value at night, its graceful shade of blended old rose is just bright enough to emphasize its value as a decorative symbol while it adds beauty to the complexion of her upon whom it shines. Pink gelatine film is placed about the illuminant within the exterior shade and on the side nearest the wall an opaque screen prevents the splotch of wall light which usually mars the effectiveness of wall lamps. Beneath this screen, a dense red film suffuses the small picture, artlessly placed at the lamp base, with a dull glow.

Above this small picture, is a water color reproduction of Burne Jones's "Awaken-

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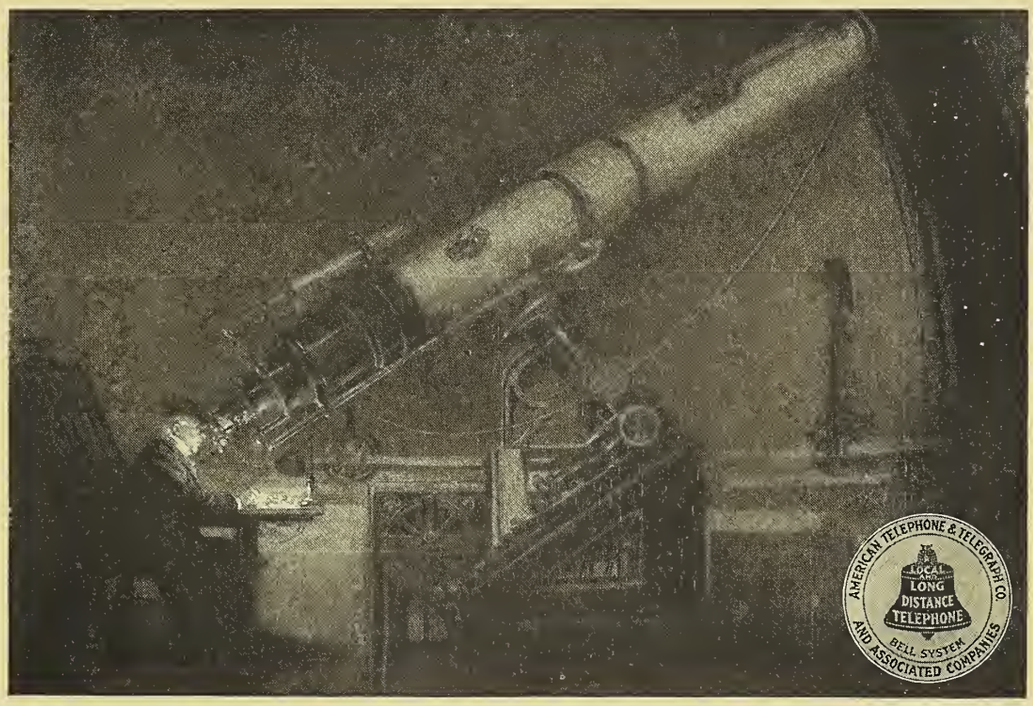
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ing of Galatea" and suspended from the jaws of a gargoyle by antique chains hangs an old Egyptian urn. Within, a lamp, placed in a home-made reflector of asbestos, and covered with scarlet gelatine film casts a rosy glow upwards, which in turn is re-diffused downwards by the ceiling, conveying with just sufficient emphasis the flesh tints betokening the awakened life of the beautiful Galatea. The lower portion of the body receives just a touch of white light, enough to mark the gradation twixt marble and flesh. Below, the figure of the sculptor Pygmalion, kneeling reverently at the base of his masterpiece, is barely revealed beneath impressive shadows. The interpretation of the artist is enhanced and the theme of this legend of ancient Greece, embellished by light. From any viewpoint in the room the effect is equally perfect, there being no glaring reflection from the picture-glass, so characteristic of our art gallery lighting.

Above the piano is a small cabinet, serving to support a transparency invisible by day but at night revealing two little owls upon a tree branch sharply silhoutted against the full moon. The player at the piano by the touch of a switch may diminish or increase the quantity of light on his music without destroying the pictorial effect by a burst of light,—the music page alone being brightened. In other parts of the room light has been directed upon a picture or even shines through the canvas of a work in oils. Where an object is to be emphasized or its effect heightened,—light is used to bring out its beauty. On a bookcase a simple candlestick with its shade of pink silk delicately illumines the face of an old French clock, and brings out the rich brown tints of the old wood, while at its base the lines of a bronze are suggestively relieved by silhouette. Another simple effect is produced by shining a soft light through a panel-skylight of stained glass set in the ceiling of a bay-window embrasure. The light shining down upon a fern is like the late glow of sunset entering the room.

The hall, too, can be relieved of its cañon-like narrowness and height, so common to some houses. Here the usual, tiresomely conventional hat-rack and umbrella-stand are absent. From above a latticed ceiling streams a light like that of the moon, making it seem like a loggia open to the sky. The light brings out in strong relief the outlines of an appropriate urn, while at the entrance arch a globe of soft golden hue is contrasted with what appears to be the blue sky overhead.

These effects are but simple arrangements that second the ordinary equipment with very slight expense and small trouble. Though one would not wish to combine them all as is done here, they suggest possibilities for heightening the atmosphere of home.

New inventions and new methods have made such possibilities in lighting methods almost unlimited and have given great opportunities to the home decorator.

A Grease Tank

WHEN cesspools are used to receive the waste of farmhouses, it often happens that the water fails to drain away after a time because of an accumulation of grease from the kitchen sink. This grease collects on the surface of the water, sometimes reaching a thickness of an inch or more, and as the water rises and falls it is deposited on the sides. If the cesspool becomes dry, as often happens when the drainage is good, the bottom is also covered with grease. Then the water is unable to seep away and the cistern becomes full in a comparatively short time, while it might not require attention for years except for this accumulation of grease.

The remedy for this condition is a smaller cesspool or tank made preferably of cement, although an empty tar barrel will serve the purpose, into which the pipe from the kitchen sink leads. Another opening, a few inches above the bottom, feeds a pipe which connects this preliminary tank with the main cesspool. When such a plan is carried out, the grease is collected on the surface of the water in the small tank, and may readily be removed at intervals. If the outlet pipe is allowed to project into the tank an inch or two and is bent downwards, there will be no escape of the grease, and the natural drainage of the cesspool will no longer be interfered with. This plan is just as applicable to houses at the seashore where there is not a regular sewer system as to those in the country, although soil at the shore is likely to be more porous than that in the country and therefore not so easily affected by the grease.

E. I. Farrington

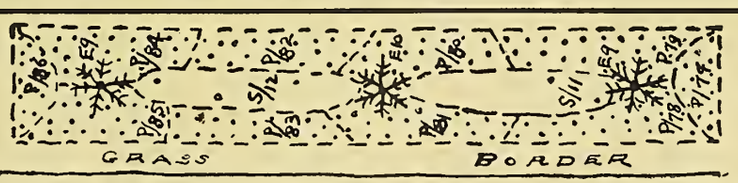


Suggestions on Vine Growing

LOVERS of gardens have a wonderful list of vines to choose from, and garden problems would be much easier if we could put the right one in its right place in the beginning. Vines of a twining nature like the wistaria and others can hardly fail to be rightly placed, as we all know their requirements and habits, but certain locations call for special qualities which can only be determined by planting, sizing up and, if necessary, removing. Only the unskilful gardener plants anything too deep to be dug up again, although many such gardeners do exist.

My pantry window is on the north side of the house, with no trees near, and it was necessary to shade it. This was a situation calling for the right vine, so I spent a few days examining the gardens of my neighbors. Much experimenting and waiting could be saved if this plan were followed in general, and guided by





One of ground plans in our booklet on "Hardy Gardens Easily Made."

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my observations I finally decided on the perennial pea as best meeting all particular requirements. Soon afterward the young seedlings were ready for business.

My house has the modern overhanging roof that extends three feet beyond the window. I had a wide piece of wire fastened to the extreme edge, stretched tightly and pegged to the ground. Another strip was fastened parallel to this, joining a hollow square to be covered with vines, allowing a fine circulation of air and keeping the pantry excellently cool. Vines growing flat against a window add but little to the comfort of a house, and the extension roof is so sane an idea that it makes one wonder at its comparative lateness.

The perennial pea vine is not considered a rapid grower, but with good rich soil and plenty of water it covered my wires to the roof in less than a year. This vine is easily kept in trim. It is not too heavy in growth, and has shown itself in all respects perfectly adapted to its place. For three months the vine itself goes into total eclipse under a veil of sprays of the tiny pink peas, giving a striking and beautiful effect that cannot fail to attract attention. And the delicate form and tender green of the vine itself is extremely pleasing even when out of bloom.

In the winter when its shade was no longer needed, and even disadvantageous through the need of extra light, I cut it back to the wires and thinned it out, leaving only enough to guard against the frames becoming unsightly.

The beautiful old jasmine with its starry white flowers grows anywhere in the garden, and in practically every locality except where there is very cold weather. Yet this beautiful vine that is attractive throughout the year is often disregarded.

A. E. STOCKTON

The Hundred Per Cent. Garden

(*Continued from page 172*)

surface of the soil becomes simply a layer of hard lumps among which the roots are unable to find a continual feeding ground. The degree of fineness to which the soil is pulverized has a great deal to do with the amount of plant food which will be released for the crop that is growing. Some years ago the Cornell Experiment Station grew potatoes several successive years on the same ground without adding fertility of any sort, except what they were able to release in the soil itself by extra thoroughness in plowing, harrowing, cultivating, etc.—and the crops they produced averaged over *three* times as much per acre as those of the average farmers in the state, the great majority of whom used manures or fertilizers of some sort. Another very desirable property of soil upon which crops are growing is plenty of *humus,* or decayed vegetable

matter. The great value of humus, which for a while puzzled the agricultural chemist, frequently lies as much in the physical effect which it produces in the soil, keeping it friable and enabling it to absorb and retain moisture, as in the actual plant food which it adds. This is one of the reasons, for instance, why the ton of manure mentioned above produced greater results than a bag or two of chemicals containing the same amount of plant food.

It was also discovered as experiments continued to be carried on, that certain crops, as clover, would sometimes show upon analysis more nitrogen than could be accounted for by the supply in the soil. Where, then, did it come from? After a good deal of speculation it was discovered that this extra nitrogen was furnished to the plant through the agency of colonies of micro-organisms which took up their abode in the plants' roots. And as nitrogen is the most expensive of the plant food elements, this was evidently a valuable fact to learn. The theory of soil inoculation for various crops which has been written about and advertised extensively during recent years, is based upon the idea of supplying these little nitrogen-gathering "bugs" of various species to soil where they do not already exist, thus making it possible to grow thereon bigger crops of peas, beans, clover, alfalfa and other things which come within the lucky group.

So much for the general principle of how plants feed and how they may be fed —and it is essential that one should have some knowledge of these things in order to deal intelligently with the problems which even the smallest of gardens offers.

The question of more intimate interest is, of course, *what can you do to make your own garden rich?* This problem naturally assumes the double aspect of how to add humus and the proper plant food to the soil, and how best to prepare it for the plant crops that are to be planted in it.

The products of the home garden, practically speaking, are disposed of at retail prices, for a penny saved is a penny earned. And as they can all be used, if proper care is exercised in planning the proportions of space for the various plantings—any additional price in buying manure or fertilizers in small amounts is more than counterbalanced, so that the home gardener, as a matter of fact, has a wider margin out of which to pay for his added plant food than has the commercial grower. First of all endeavor to secure a supply of manure. As manure varies so as to be worth from practically nothing to six or seven dollars a cord (delivered), you should be careful to get it only from someone upon whom you can rely. It should be well rotted and have been kept under cover. Furthermore you should see that it has not been burned out or "fire-fanged" from becoming superheated, in which case it will have in spots

(*Continued on page 226*)

A Garden Full of Gladioli for 50 Cents



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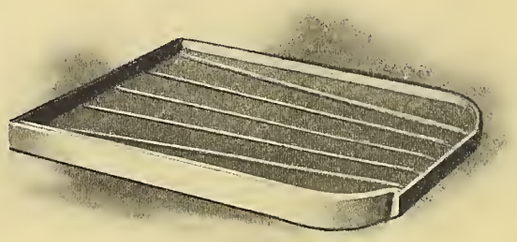
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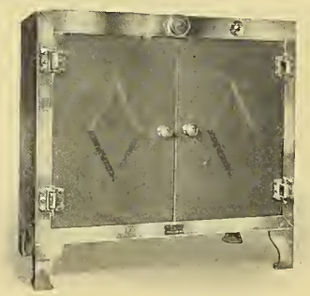
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Equipping the Kitchen

(*Continued from page* 187)

seen. White is the dominant note of the modern kitchen, the perfect cleanliness of which is its chief beauty. While a simple stencil border is sometimes seen, other decorations are rather out of place, except those given by carefully chosen utensils, displayed on the walls, or seen through cupboard doors.

Kitchen furniture requires little consideration. A small chair or so, and a kitchen table, are all the movables necessary. Sometimes a hinged shelf, dropped when not in use, is substituted for the table. A niche for an ironing board is often contrived in some convenient corner.

To stock the kitchen with new utensils is an interesting task in view of the fascinating ware to be found in the shops. Many home builders think aluminum the best ware to invest in; since it is light, heats through quickly, and is practically indestructible. The initial cost is, of course, greater than in buying enamel and other wares. Blue and white or brown and white enamel, not long ago a favorite ware, is still seen in many kitchens, making a charming array, though it chips easily and must then be discarded as dangerous. Tin is best for many purposes, and while soon worn out, is cheap. While heavy iron kettles are no longer used, an iron "spider" is still a necessity. Before selecting utensils it is a good idea to study the lists and pictures of kitchen ware used by that nation of cooks, the French. While evidently behind us in the hygienic planning of kitchens and in the utilizing of mechanical devices, their utensils have a way of being admirably adapted to their purposes. In a number of lists made out for households of various degrees, from the poor man's to the prince's, in a French book recently published, there are, among other delightful things: a kit of ladles and spoons, each with its designated use, and a metal hanger to keep them on; kettles for bouillon and ragout, of uncommonly good design; pretty sets of little saucepans with hot water pan, for the making and keeping hot of sauces; also all sorts of handy basins and strainers. While these utensils are in the copper preferred by the French, similar models may be found in our shops in other materials. The cost of the aluminum ware shown in our range illustration was as follows: saucepan $1.98; small double boiler $2.25; percolator $7.00; covered casserole $3.49.

For kitchen crockery, white, decorated with blue stripes, or yellow ware are commonly seen. Occasionally white pottery, decorated in a special device furnished by the home builder, is procured from the manufacturer, a method that gives a distinctive air to the kitchen cabinet.

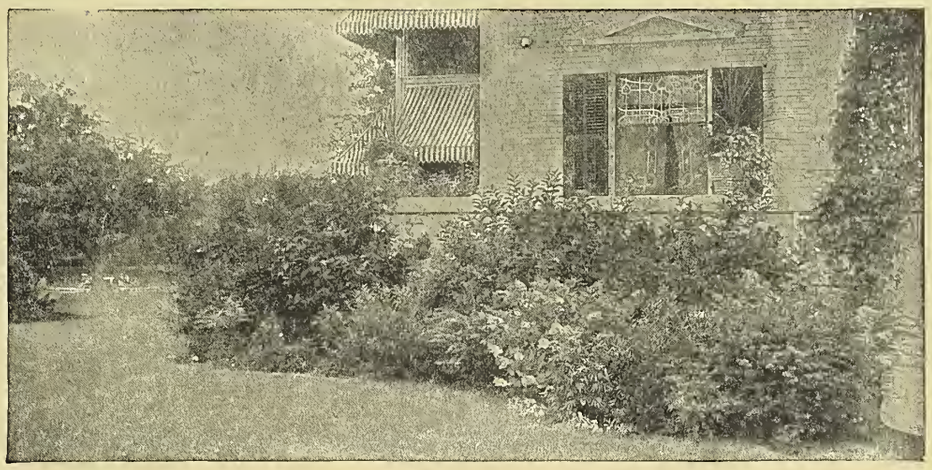
The kitchen and its equipment fully planned, the adjoining cool room, pantry and entries must be considered. As to walls and floors they receive practically the same treatment as the kitchen, except that the dado of tile or cement may be omitted. Built-in features are confined to

the pantry. The "butler's pantry," large and fitted with every convenience for elaborate entertaining, is not a small house feature. A small serving room, however, is frequently placed between kitchen and dining-room, since kitchen noises and odors are then lessened in the rest of the house, and convenient space is provided for storing china and table linen. Though space is restricted, a sink is sometimes set into the window ledge. If the serving room can consist of rather a long, narrow hallway, filled in at one side with cupboards, and well lighted on the other by a group of two or three windows occupying the entire upper wall space, it proves much more convenient than the ordinary cave-like room, lighted by a single window and with much wasted floor space. Also the window ledge is then of sufficient length to be of some use. If the house is steam heated, a steam plate warmer is installed beneath the ledge, or an electric warmer may be used. It is a modern innovation and gives good results. A corner is perhaps utilized for a built-in cupboard to hold table leaves. Drawers fill the lower sections of the cupboards, as more convenient of access. High cupboards are used only for storing purposes. In those placed at a height easily reached, the glass and china are kept.

The small, cool room opening from a kitchen opens also, as a rule, into an entry or porch. If ice must be put through a window the refrigerator should be of a kind that permits this method of filling. Usually it is not. Thick walls with an air space keep an even temperature in the room. A shelf or so to put groceries on and a place for milk bottles are found convenient. A recently built cupboard, a substitute for a refrigerator, takes the place also of cool room. Built into a shallow bay, with a small window at one end, the walls and floor are coated with cement mixed with cinders. With an ice shelf, draining into a sanitary trap, and food shelves made of zinc, the cupboard is easily flushed with a hose. It is used without ice the greater part of the year.

Preserve and vegetable rooms are kitchen auxiliaries on the cellar floor. Thick walls ensure an even temperature. In some preserve rooms slits in the outer wall serve as ventilators, all outside light being excluded. In others the tradition of keeping preserves from the light is disregarded, the housewife relying upon sterilization of jars and the perfect cleanliness of modern methods to prevent fruit from fermenting. The old-fashioned, hanging shelf that occasionally spoiled a season's work by falling, has given place in the modern preserve room to neat cases of shelves, with or without doors, that line the walls. On these shelves is an array of stored-up delights, preserving the colors as well as flavors of summer. For with the study of Colonial furniture and architecture has come a study of Colonial recipes and a revival of jams and jellies, no longer bought from the grocer, but





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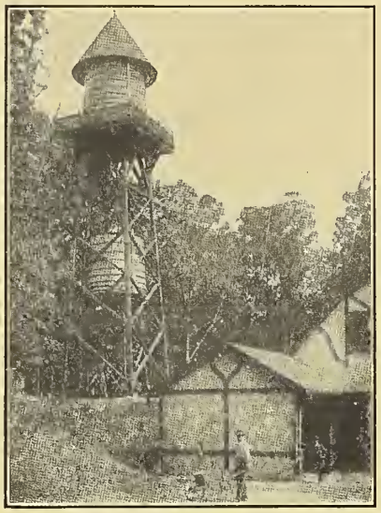
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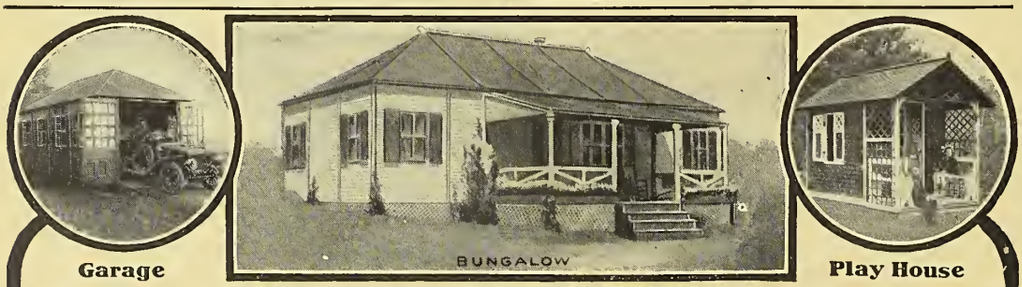
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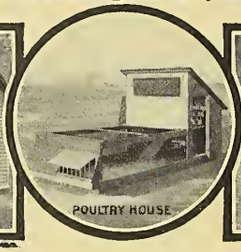
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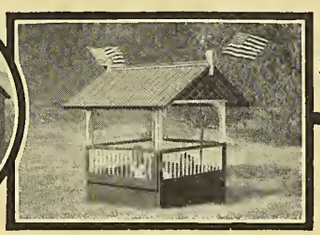
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concocted in the home kitchen as in former days.

The vegetable cellar is also furnished with shelves and may have in addition a rack with ventilated trays for the keeping of choice fruits. If the vegetable room is properly built and ventilated, with pits for the storing of certain of the vegetables, it does much to lessen the cost of living by permitting the storage of supplies bought in the fall when prices are comparatively low.

A garbage reducer and hot water heater combined is sometimes installed on the cellar floor, disposing of at least one problem of the kitchen. If garbage must be kept in cans to be collected each week, it is placed in a covered but ventilated place, often on the rear porch foundation, reached from above through a trap door in the floor. If the family garage is near the house, outside corner cupboards may be built in it, just large enough to hold garbage and ash cans.

In the devising of convenient features for the kitchen and its tributary rooms, each home builder has individual ideas. Carefully worked out, these ideas are what give distinctive quality to the culinary department of the household, perhaps the most important in its effects on the health and contentment of a family of any of the home departments.



The Hundred Per Cent. Garden

(*Continued from page 223*)

a light, gray, ashy appearance. For a garden 100 x 50 ft. two to three cords will not be too much; and though this may seem to you at first glance a large amount to spend for plant food for a garden of this size, you must remember that from one to two hundred dollars worth of vegetables can be removed from it during the year, if it is producing up to its maximum capacity; and it will pay you much better to have it do that than to be getting half-crops from it, with just as much money spent in preparing the soil, planting, cultivating and looking out for it. Have this manure packed in one or two convenient piles until you are ready to have the ground plowed or spaded, whichever the case may be.

In case it is not possible for you to obtain manure and you have to place your reliance in commercial fertilizers, try to pick out a place for your garden which was in sod a year or two ago, as this will to a large extent take the place of the humus furnished by the manure. Most garden crops require what is termed a "4-8-10" fertilizer, one which has four per cent. of nitrogen, eight per cent. of available phosphoric acid, and 10 per cent. of potash. A fertilizer approximating this formula may be bought in one of the ready mixed "Market Garden" brands, at from two to two-and-a-half dollars per one

hundred pounds. Two to two hundred and fifty pounds will be ample for a garden of the dimensions above. If you want to take the trouble you can get as good or better results by the mixing of your own fertilizer. One hundred pounds of Nitrate of Soda, two hundred of Muriate of Potash, three hundred of Acid Phosphate and four hundred of high-grade tankage —or smaller amounts in the same proportions—will give you a mixture excellent for garden use.

A very satisfactory way is to apply part of the plant food in the form of natural manure and the rest in a mixture like the above, using say half of each. Where manure alone is used, it is very advisable to use fifty to a hundred pounds of muriate of potash in addition as the manure is quite certain to be deficient in this element. The manure should be spread over the ground evenly, just before is is plowed or forked up, and the fertilizer should be spread on *after* the ground has been turned over, but before harrowing or raking. Special fertilizers for some crops are used for a "top-dressing" after growth begins, but these will be mentioned later on, in another article.

Having thus gathered together the raw material, on which our plants are to thrive and grow fat, the next question is how to prepare in the most effective way. The first operation, of course, is that of turning over the soil where it lies, packed hard and cracked after the previous season's tramping and the previous winter's freezing and thawing. First of all clear off and burn any old pea-brush, bean poles, cabbage stalks or corn stalks which may have been left over, otherwise they will be catching in your implements and turning up unexpectedly to annoy you all through the summer.

If your garden is large enough to admit the management of a horse or team, have it plowed instead of dug up by hand; the job can be done much more thoroughly, quickly and cheaply that way. The ground should be turned over just as early in the spring as it is fit to work, as there are quite a number of things that can be planted at once. Care must be taken, however, not to be too previous with this work, because if the soil is plowed while wet and sticky it may be injured for several seasons. If it happens to be heavy, low-lying ground, it may have to remain untouched for several weeks after your more fortunately situated neighbors have been able to begin their garden operations.

The depth to which the soil should be turned over is determined by the condition of the soil itself. If it is a good garden loam that has been worked for many years before, you may be able to work it up for six or even twelve inches in depth. A pretty safe general rule to follow—except where the soil is a very light, sandy one—is to turn it over as far down as the "subsoil" which is usually hard, lumpy and of a different character from the surface. It will do no harm if a little streak of this is turned up here and there, but by all means



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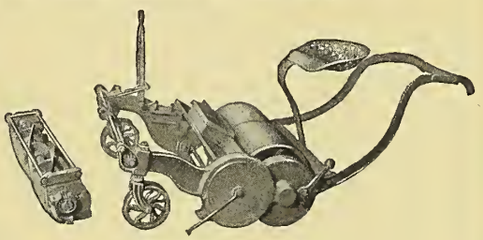
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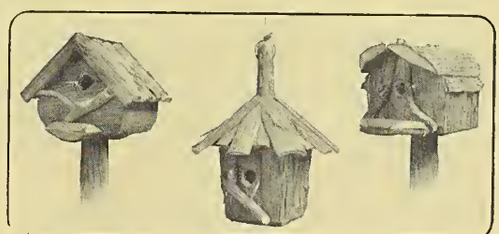
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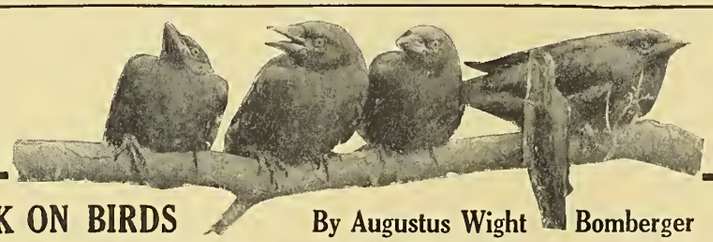
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concentrated—all available, a scientific discovery, tested six years. It is rich in all elements necessary to fertilize the ground. It is economical—5 lbs. for $1.00 express prepaid anywhere in United States. Enough for 500 feet lawn or 130 rosebushes or other shrubs. 100 lbs. $5.00, freight prepaid east of Mississippi River. Special prices for quantities. Send for valuable authoritative booklets on fertilization of lawns, flower and vegetable gardens and trees and shrubs—*Free*.

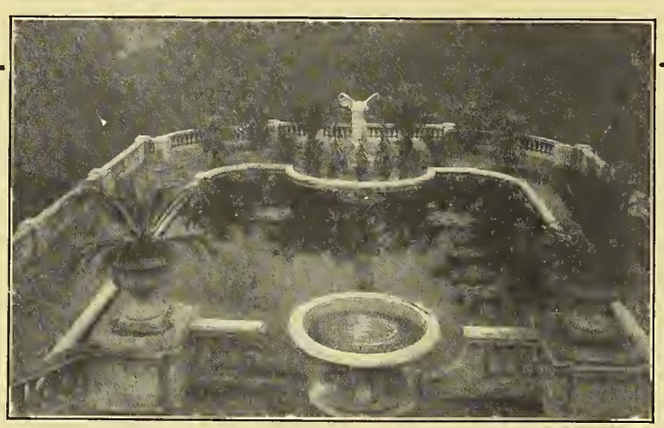
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A BOOK ON BIRDS By Augustus Wight Bomberger

A nature book you can scarcely lay down before finishing. You feel yourself at the author's side, crossing meadows, climbing fences, tramping the damp, fragrant earth of the woods—seeing and hearing wonder after wonder of bird life through the keen, knowing eye and ear of the author—amazed, charmed and instructed. **32 Photographs from Life**, the result of years of toil by William L. Baily. **A Novel Field-Key** enables anyone to classify the birds of the Eastern States. 209 pages. Bound in gold-decorated cloth. At all booksellers', or sent postpaid for price and postage. ***Price, $1.00 net. Postage, 8c.***

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This well known formal garden which we designed and erected on the grounds of R. R. Colgate, Esq., Sharon Station, Conn., admirably shows the delightful effects secured by the proper use of Garden Ornaments.

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The Largest Manufacturers of Ornamental Stone

avoid getting a layer of it on top of your good soil.

If the garden is too small to make the use of a plow practicable, and you have to resort to having it spaded, see that this is done both deeply and thoroughly, as no amount of care afterwards will make up for slovenly work here. If it is an old, well-worked garden soil it may be necessary to "trench" it or dig it two spades deep in order to turn it over clear to the bottom. In doing this the soil from the first row or furrow is thrown up on the surface and the layer below it is turned over where it is. The surface soil from the next row is thrown on top of this, leaving the lower layer open to the spade—and so forth for the length of the patch.

Harrowing should be done with more care, if anything, than the plowing, the object being to pulverize the ground very thoroughly below the surface for three or four inches down; then to "finish off" the surface itself until it is as fine and smooth as it can be made. Modern harrows are adjustable so that the same one will do both the two kinds of work. The garden is then left to be finished off by hand with an iron rake according as it is needed for crops.

Do not be disturbed if it seems to dry off very quickly on the surface after harrowing, for this is simply a sign that in reality the moisture below is being saved from evaporation by the "dust mulch" on top of it.



Hints from the Agricultural Department

IN the report of the Department of Agriculture for 1912 are found the following paragraphs of interest to gardeners:

FOOD HABITS OF BIRDS

Careful studies have been made of the food habits of birds considered injurious and of many species that are known to be beneficial. More than 50 species of birds have been found to destroy the cotton boll weevil and 31 have been found to feed on the alfalfa weevil which has recently become so destructive in Utah. Special studies have been made of the food of birds in the fruit-growing districts in California and of special generally distributed groups, such as the flycatchers, grosbeaks, shore birds, and waterfowl. A summary of some of these studies, entitled "Common Birds in Relation to Agriculture," has proved one of the most popular bulletins ever issued by the department, more than a half a million copies having been distributed in recent years.

GIPSY MOTH AND BROWN-TAIL MOTH

The gipsy moth and the brown-tail moth, two insects accidentally introduced into New England, became so abundant and destructive in 1905 as to call not only for large State appropriations but for governmental aid. Realizing the hopelessness of

exterminative work after these pests had gained a firm foothold over 4,000 square miles of territory, Congress appropriated to the department a sum of money to be used in the effort to prevent the spread of both gipsy moth and brown-tail moth.

During the years in which this appropriation has been made, the bureau and the different States acting in co-operation have succeeded in preventing any extensive spread and in making the conditions of the towns and villages within the infested territory perfectly livable, whereas previously both species had been enormously destructive and very annoying.

During that period further extensive importations of the parasites and natural enemies of the gipsy moth have been made from Europe and from Japan, and of the brown-tail moth from different parts of Europe. Very many species have been imported in great quantities, and a number of them have been established in New England territory. The effect of their work is being more strongly seen each year, and it is hoped that they will shortly become so numerous as to be important factors in holding the destructive insects in check.

Recent discoveries have been made which promise, by observing certain principles in forest management, to result in the preservation of good stands of timber in the New England forests in spite of the continued presence of these tree pests.

OTHER NOXIOUS INSECTS

The introduction of the parasites and natural enemies of the gipsy moth and brown-tail moth is not the only work of this kind done by the bureau. An important enemy of the black scale of the orange and olive has been introduced, an egg parasite of the elm-leaf beetle as well, and at present the bureau is engaged in importing the European parasites of the alfalfa weevil. Similar shipments of American parasites to foreign Governments have also been made, and the most striking success has been achieved in the sending of a minute parasite of the mulberry scale from the United States to Italy, where it is reported to have been of the greatest benefit in the destruction of the scales, which bred so numerously in the mulberry plantations as to threaten the entire destruction of this tree upon which is based the great silk-growing industry of that country.

A few years ago a thrips appeared upon pear trees and other deciduous fruit trees in central California, completely blasting the crops and spreading rapidly, threatening the destruction of practically all deciduous fruits on the Pacific Coast. After two years' investigation of the method of life of this pest, the bureau discovered perfectly competent remedies, by the use of which orchardists are once more growing their normal crops.

Three years ago a weevil destructive to the alfalfa was discovered in the vicinity of Salt Lake City. It has spread rather rapidly to the north and to the east, and

James McCreery & Co.

34th Street ***23rd Street***

REED AND WILLOW FURNITURE

Very much in evidence this season is this particular style of Furniture, the popularity of which is manifested by the growing demand.

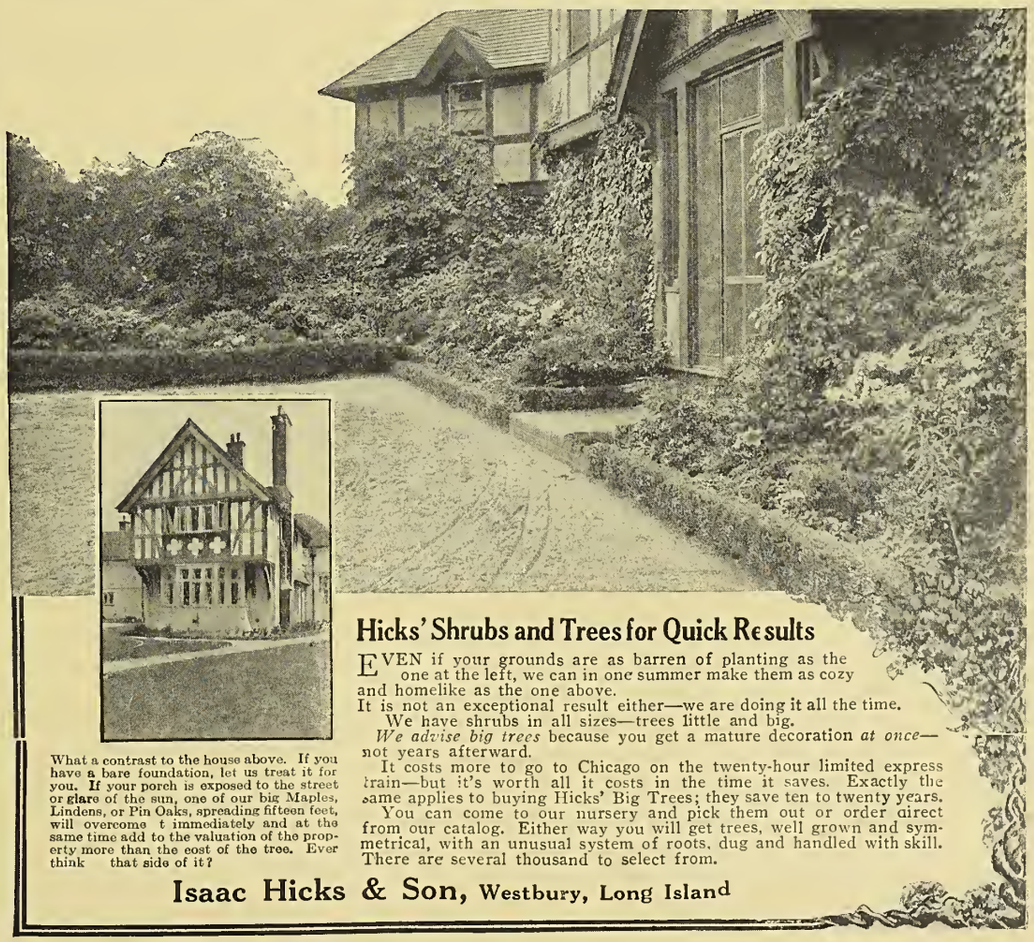
Reed or Willow Furniture is much sought for its simplicity and cosy attractiveness, also for its durability and moderate price.

Suites to harmonize with decorations are finished in shades to match any wood trimming or White Enamel; cushioned seats and backs of plain colored fabrics or handsome Imported Cretonnes, being most attractive for bedrooms or summer sitting rooms.

Willow Suites consisting of Sofa, Arm Chair, Arm Rocker, Side Chair and Side Rocker, handsomely cushioned seats and backs. $87.50 and upward.

Suites in White or French Grey Enamel, $95.50 and upward.

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What a contrast to the house above. If you have a bare foundation, let us treat it for you. If your porch is exposed to the street or glare of the sun, one of our big Maples, Lindens, or Pin Oaks, spreading fifteen feet, will overcome t immediately and at the same time add to the valuation of the property more than the cost of the tree. Ever think that side of it?

Hicks' Shrubs and Trees for Quick Results

EVEN if your grounds are as barren of planting as the one at the left, we can in one summer make them as cozy and homelike as the one above.

It is not an exceptional result either—we are doing it all the time.

We have shrubs in all sizes—trees little and big.

We advise big trees because you get a mature decoration *at once*—not years afterward.

It costs more to go to Chicago on the twenty-hour limited express train—but it's worth all it costs in the time it saves. Exactly the same applies to buying Hicks' Big Trees; they save ten to twenty years.

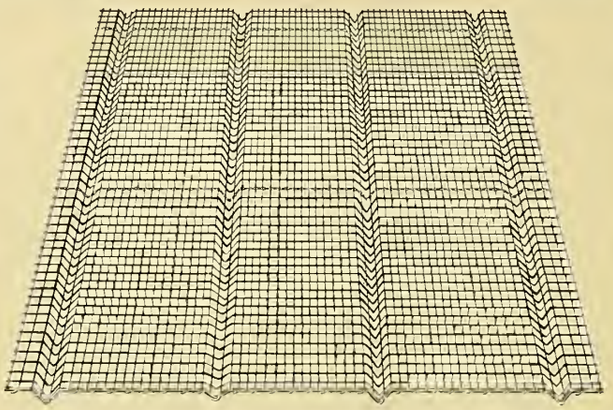
You can come to our nursery and pick them out or order direct from our catalog. Either way you will get trees, well grown and symmetrical, with an unusual system of roots, dug and handled with skill. There are several thousand to select from.

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requires no furring on account of the V-shaped corrugations which are imbedded at intervals of seven inches.

This feature alone is worth considering, but that's not all. It WILL NOT RUST as it is heavily galvanized with the finest grade of Western Spelter, and is much easier to handle and will conform to irregular curves much better than any other form of metal or wood lath.



Walls or ceilings plastered on this lathing WILL NOT CRACK OR DROP OFF, owing to its great keying qualities, which we will explain if you will drop us a card asking for our booklet No. 61.

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Our general catalog will also be mailed free upon request, which describes our entire line, such as Greening's Patent Trussed Steel Wire Lathing, Buffalo Crimped Wire Concrete Reinforcing, Wire Cloth of all kinds and Wire and Artistic Metal Work for all purposes. DROP US A LINE AT ONCE.

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With these tools you can make the garden right and keep it in perfect condition without hard work.



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and are the best it is possible to produce! If you love flowers, you have *a rare treat* on pages 111 and 112 of BURPEE'S ANNUAL FOR 1913, where we *strive* to describe and picture in nine colors the amazing beauty of the

New African Daisies These unique Dimorphotheca Hybrids are the most attractive annuals that have been "created" in a decade! Wonderfully profuse in bloom, they carpet the ground with bright, large, daisy-like flowers and are easily grown everywhere. Per pkt. 10 cts.

Crimson Ray Cosmos Burpee's distinct novelty of 1912—three times as many petals as the old Cosmos and star-like. Per pkt. 10 cts.

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For 25 cts. we will send ALL THE ABOVE and ALSO one regular ten cent packet each of *Burpee's Improved* IMPERIAL CENTAUREAS,—Burbank's *New* FIRE-FLAME ESCHSCHOLTZIA,—Fordhook Finest Mixed GRANDIFLORA PHLOX and the charming new BURBANK POPPIES.

☞ EIGHT ELEGANT ANNUALS, costing eighty cents separately,—*mailed for* ONLY 25 CTS.! *Choicest seed of each all grown upon our own farms in Pennsylvania, New Jersey and California.*

☞ If not already received, be sure to WRITE TO-DAY for

Burpee's Annual

Long known as "The Leading American Seed Catalog,"—this bright book of 180 pages for 1913 is better than ever before. It is mailed FREE, upon application.

W. ATLEE BURPEE & CO.

Seed Growers, Philadelphia

Largest Mail-Order Seed House

☞ See our "COLUMN OF SWEET PEAS," on page 29 of *House & Garden* for February.

appeared to threaten great danger to this vitally important crop of the irrigated regions of the West. The bureau's experts have been studying it since the beginning, have been engaged in importing its natural enemies from Europe (it is a European insect), and have now discovered a method by which the pest can be handled after the first crop of alfalfa has been harvested. It is hoped that in time some other means will be discovered whereby the important first crop can be saved.



A Manure Water Sack

ROSES should always receive a generous wetting with manure water as the flower buds begin to swell. The size of the succeeding blooms is a splendid reward for the courtesy on your part. But to have a barrel of a slop of manure and water in your yard is offensive in many ways. A much better plan is to put half a bushel of manure in an old sack, drop it at the root of your favorite rose, stick the nozzle of the garden hose in the sack and turn on a gentle stream of water. The manure solution will go right to the spot and the sack later dropped in an obscure corner of the garden. HARRY N. HOL



When the Spring Run Starts in the Sugar Bush

(Continued from page 193)

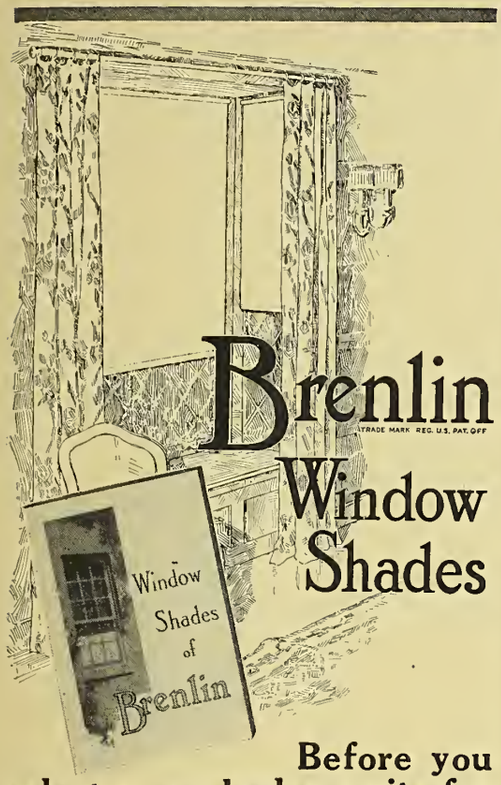
means a long sap season if you have a freeze and it thaws a little during the day. Of course, if it freezes up tight for long the sap stops and you've got to set around waitin' for good weather. Same thing if it gets too warm. That may end the season for good."

The next day a new problem presented itself. For in many of the buckets ice was floating when we got around.

"Chuck it away," was Ray's advice, "unless you find the whole pail frozen solid."

This seemed to me wasteful at first, but when I thought of salt water freezing, I knew that the action of freezing would accomplish the separation of sugar quite similar to that of evaporation. Ray told me later that an old Indian used this very method of getting his sirup from the sap.

We worked as before during several days. First a cold snap interrupted our labors and later a few very warm days seemed to suspend the flow. One day when a heavy wind swept through the bush we got hardly any run whatever. The season lasted well into March and the camp was open six weeks in all. But by no means did we have sap run each day; perhaps we had ten or twelve all together. Toward the end of the season the sap



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This book not only tells why it is more *economical* to buy Brenlin Shades, but shows how clever housekeepers everywhere are using Brenlin to make their windows *look much better.* It contains actual samples of Brenlin in all grades and many rich colors, and gives valuable suggestions for their artistic use in harmonizing room color schemes and draperies.

With this book we will send you the name of the Brenlin dealer in your town who is now ready to show you the three popular grades, priced, for the ordinary window (1 yd. x 2 yds.) at

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BRENLIN UNFILLED—the 75c grade—is the world's finest window shade. It should always be chosen where length of service and attractive appearance are desired. For this grade is made of closely woven cloth without the "filling" that causes ordinary shades to crack and show unsightly streaks and pin-holes. Sun won't fade it nor water spot it. It is supple—not stiff—yet always hangs straight and smooth. And it *really shades.* 75c for windows 1 yd. x 2 yds. Special sizes and Brenlin Duplex—white one side, dark the other—made to order at proportionate prices.

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May's Selection of Colossal Pansies; May King Lettuce, the new early Head Variety.

L.L.MAY & CO. SAINT PAUL MINNESOTA

changed from clear white and later on got a yellowish tinge, and again it was on Ray's diagnosis that the season was decided to be ended.

As he tasted it one morning he made a face and said, "Buddy sap." It had a peculiar flavor and a peculiar odor.

"It don't do no good to keep on a day later than when you get buddy sap. Besides it spoils your trees," was Ray's explanation. "If you notice, on some of the branches buds are beginning to grow full."

So the buckets were brought in and together with the spouts boiled and dried. The evaporator was cleaned out with vinegar and the little shack closed up to wait for another season.

Some of the sirup was boiled in a great wash boiler over the kitchen stove as Ray had decided, and made into cakes and those with a shining row of sirup cans stowed away for the delectation of others throughout the year.

I made another visit to the bush with Ray a few weeks later and this time we cleared out some birch and oak that seemed crowding on the maple.

"The best sugar bush needs some care," Ray opined, "but it is worth it. You see we make quite a bit on a stand like this with about five hundred trees. The work is fun and it comes when we've got nothin' else to do. And we couldn't use this land for nothin' else save pasturing and we've got enough of that. I only have to keep other sorts from crowdin' in. You get more sap from a straight tree that ain't crowded. Seems as though the trees that have the best spreadin' crown give the most sap. But then again the ground ought to be shady and well covered with a litter of leaves so it don't dry out in summer. That's why I don't let the cattle graze here. You see the maples don't root deep and much of the nourishment comes near the surface. We've got it about right here 'cause on the south side of the slope we get an earlier start than most of the bushes and when we are through there we can work on the north side. That starts later. The trees are good first growth, too, and uncrowded. Why from some big trees here we may get as much as forty gallons, although on the average it's less. You see that makes from about a pint to a gallon of sirup to a tree. Rather a tidy little item that just comes if you are a bit careful. But I don't care what it nets, it's an awful lot of fun. When a man's been locked up in a cow barn most all winter or settin' round a stove, seems like this sugarin' was a sort of ritual celebratin' spring and meanin' you was to be purified into a *real* man 'stead of a bunch o' clothes."

And if a countryman can feel like that about it you may imagine the effect that the spring run has upon the man fresh from the city. The first coming of spring is an experience well worth having; indeed one has not entirely lived until it has been enjoyed. The sap run in the sugar bush typifies the whole experience, if for that alone it is worth while.



PRETTY GARDENS

Nothing adds greater beauty to a house than a tastefully-arranged garden—and nothing detracts more from the appearance of a garden than the barren spots where seeds "refused" to grow.

It is not always poor soil or improper care that makes these blotches; but very often inferior seeds are to blame. Planting poor seeds in a garden always has that air of dubiousness—*perhaps* they *may* grow, and then again perhaps they may not.

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"The Most Reliable Seeds"

for over a century—since the days of Washington and Jefferson—have been renowned for their uniform purity and fertility.

We have extensive trial grounds in Connecticut and Long Island, as well as in France, and no effort is spared that might possibly lead to the betterment of our seeds.

Our catalog contains a most complete list of flower and vegetable seeds, and the descriptions it contains are both clear and accurate. Write for a copy now, it is just full of helpful suggestions.

And while you have your pen in hand, ask for a packet of the seeds of that beautiful new flower, the Hybrid African Daisy—ten cents in coin or stamps will cover the cost.

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Band With Tree Tanglefoot!

No Creeping Insect Escapes Its Sticky, Deadly Grip!

The destroying army is coming! Don't wait until you see the vanguard. Band your trees with Tree Tanglefoot two weeks before the Gypsy, Brown-tail and Tussock Moth Caterpillars, Canker Worms, Climbing Cut Worms and Bag Worms begin their ravaging work.

Easily and Quickly Applied With a Wooden Paddle

Tree Tanglefoot is harmless and the only sure and safe protective. One pound makes about nine lineal feet of band. One coating lasts three months and longer in any temperature, rain or shine—remains sticky and powerful twenty times as long as any other substance. Needs no mixing—just open the can and apply. Will not soften or run down the trunks of the trees. Absolutely prevents any creeping, crawling pests from harming your trees.



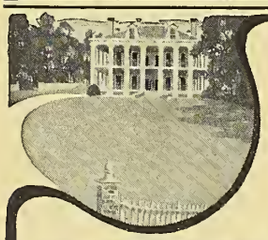
From actual photograph taken at Melrose, Mass. TREE TANGLEFOOT saved the tree on the left. Moths stripped tree on right.

Sold by Reliable Seed Houses

Prices: One-pound cans, 30c; three-pound cans, 85c; ten-pound cans, $2.65; twenty-pound cans, $4.80. Write today for valuable free booklet and name of nearest dealer.

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Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot (2)



Grow An Old Kentucky Lawn

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Direct from the Blue Grass State. Grown, selected and cleaned by people who know how. Hundreds of enthusiastic users are enjoying the beautiful lawn it produces—why not you? 1 lb. bag 30c; 4 lb. bag $1.00; 9 lbs. $2.00; 14 lbs. $3.00; all prepaid. One pound is sufficient for 300 square feet. Order today. Interesting folder free upon request.

BLUE GRASS SEED CO., Sta. F, Covington, Kenton Co., Ky.

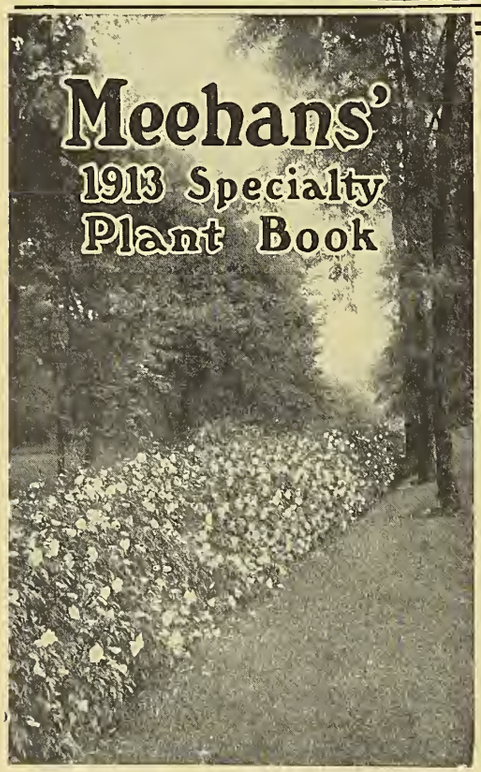
A WORD TO THE HOUSEKEEPER

Last year you had to take the second-best in your improvements because the best was beyond the reach of your designers and there were no experts in your locality.

House and Garden is the advisor you need if you contemplate improvements of any kind about the house or garden. It covers the field of decoration, furnishing and gardening with authority, artistic taste and precision, and its whole purpose is to make the home more beautiful and more livable. The beauty of the magazine and its illustrations will be a pleasure for you, even if you do not plan any changes or improvements just now. Let your subscription start with March 1st, and include this helpful expert among your regular visitors.

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McBRIDE, NAST & CO., Union Square, New York



—sent free on request to any garden lover—is more than a mere catalog of well-grown nursery stock. It features the new, rare and unusual plants you need to give your garden individuality. For instance,

unusual hedges that lend distinction to any grounds

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For English Garden effects, you need **Beech Hedge.** It is well nigh impossible to get it right. Our years of effort and three transplantings have been well rewarded in the remarkable stock offered now.

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Correspondence

EDITOR'S NOTE:—*From the numerous letters which come in from subscribers who take advantage of our offer to help them solve their house problems, we select the following which, in conjunction with the replies, seem to us to have somewhat more than a merely individual value.*

Query.—As a subscriber to HOUSE & GARDEN I am going to take advantage of your offer to answer questions relative to interior decoration.

I wish to know what you would suggest for pictures for a living-room 12′ x 22′ (this room being the only one in the house where pictures could be hung to advantage) paneled by means of battens nailed on rough plaster, plate shelf 5′ 7½″ from floor, battens and shelf fumed oak and plaster dark brown below plate shelf and turquoise blue above, beamed ceiling and plaster on ceiling buff.

There are four available spaces for pictures: 2′ 5½″ x 8′ 6″, 2′ 5½″ x 3′ 6″, 2′ 5½″ x 4′ 9″ and 2′ 5½″ x 10′ 0″ (over fireplace).

Furniture is slightly mission, fumed oak, and consists of couch, table, bookcase, two rockers and two pieces of willow, and two dark red rugs of sarabend pattern.

F. G.

Answer.—Choosing the pictures for one's home is so much a personal matter that it is hard to give any advice on the matter. I can give you a few suggestions that may be of some aid to you in determining what to buy for your living-room. In the first place, I should have harmonious color. The color of the wall being dark brown below the plate rail and turquoise blue above, I should certainly bring the color of the lower wall into the upper division in some way. If you are going to use Oriental rugs, I should use fairly colorful pictures (perhaps some embroideries, Chinese, Japanese, or Indian) either under glass or tacked carefully on the wall. Every year at the various art exhibitions there are some charming paintings which are moderate in price. One can buy some very excellent things in this way at from $25.00 to $150.00. If you are a devotee to Japanese prints there would be no difficulty in selecting subjects of very beautiful colors, which would bring in the brown, blue, and perhaps a touch of that very beautiful Japanese orange which they use so much.

Single prints could be framed on silk (as I recommend all Japanese prints being framed) in a soft brown frame, that would fit the smaller spaces you have, while the long spaces could have triptyches (three piece prints) or five piece prints. A triptych would fill your eight foot space nicely, while a five or seven piece print would be decorative for over the fireplace.

If you do not care for Japanese prints, some photographs or carbon prints of the old masters, more particularly prints of drawings, would be excellent. Holbein prints come in at least three sizes, at $1.00, $1.75 and $2.50 each, and are very excellent. For the long space over the fireplace



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you could have several of the most attractive of the subjects framed together, and you might use one or two single prints. I would not use too many Holbeins in the same room as the general character of the prints is the same, which is not the case with Japanese prints. For the other spaces you could choose carbon prints of some of your favorite subjects. Carbon prints measuring 14 x 18 to 16 x 20 inches cost about $5.00 each.

Very beautiful Japanese prints that would be appropriate for your room can be bought for from $4.00 to $50.00, $60.00 or $75.00 for a series of prints to fill your large spaces.

If I can be of any service to you in selecting your pictures I should be very glad to do so. I am in touch with most of the artists, try to attend the greater part of the exhibitions and see the pictures that are offered for sale and know the prices asked. I have a large collection of Japanese prints of my own, and am well prepared to make selections of prints for any one desiring them, and I am, of course, in touch with most of the stores that carry prints and photographs.

Query.—I am about to furnish a new home and would be most grateful for some suggestions as to wall treatments, floor coverings, hangings, etc.

The house covers a ground space of 41′ x 30′ with 41′ frontage west.

The hall is in the center with living-room on south and dining-room on north side, both rooms facing west. Opening off from the living-room toward the east is a den.

I would also like color schemes and ideas for bedrooms, one furnished with cream enameled bedroom set and another in Circassian walnut. The bedrooms on upper floor are laid out much like the rooms in lower floor. All woodwork on upper floor is old ivory enamel.

On lower floor, Oregon pine in dark brown, wainscoting up to window sills. Finished hardwood floors down stairs; waxed pine upstairs.

We have a glorious view of San Francisco Bay, the Golden Gate and surroundings and I would like some suggestions for a name or inscription or motto suggestive of this fact; and where such an inscription might be placed. E. W. H.

Answer.—Your letter of inquiry did not state whether you had any furniture which must be employed in your down stairs rooms, nor give me any suggestion as to the preference for the color scheme for your lower floor. The varieties of wall coverings, rugs and other furnishings are in innumerable colors, and tones of color, are so great that any one of many color schemes might be suggested. Old gold and blue, or old gold and mulberry make very beautiful combinations of color, and I would suggest that you have some wall covering of grass cloth fabric, or paper of an old gold used in your dining-room, hall and living-room.

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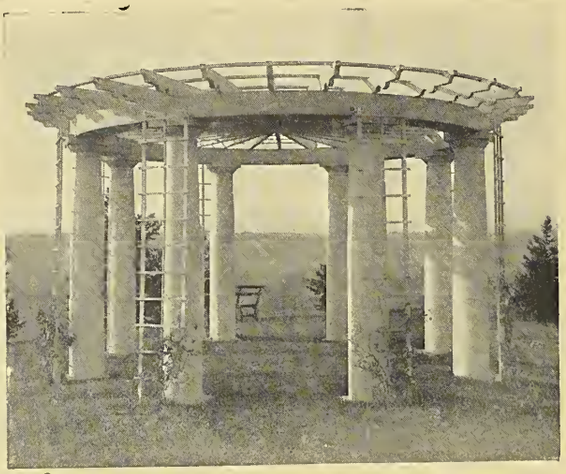
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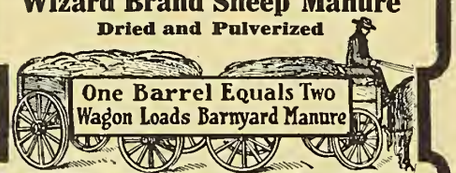
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The over hangings, seats of your dining-room chairs, rugs and other furnishings of your dining-room might be of figured mulberry, or in mulberry tones. A linen tapestry for the draperies; a woolen tapestry for the chair seats, and a rug embodying the two colors—mulberry and old gold.

The hall I should furnish in tones of old gold. The living-room, being a south room, might be carried out in tones of old gold and old blue. Many beautiful fabrics, rugs, potteries, etc., coming in these colors.

In the den back of the living-room, the tapestry paper might be used. The predominating color should be old blue. Where the paper is figured, hangings and other fabric furnishings of the room should be plain old blue goods.

The bedroom in which you are going to use the cream enamel set, would be charming in a shell pink. Shadow cretonnes in beautiful patterns come in these tones, and a striped wallpaper at only 30 cents a roll can be had. Plain mohair "Tudor" rugs, size 3 by 6, which are a lovely color, and are soft to the feet, cost $9.50 each.

The Circassian walnut set I should use in the blue room. Tudor rooms are also to be had in a charming tone of blue wallpapers and fabrics.

Shadow cretonnes, or linen tapestries come in beautiful designs and colorings appropriate for use in such a room.

Why do you not use the name "Golden Glow" for your place, and have planted in the yard, or grounds, large clumps of this profusely flowering plant? The name is also suggestive of your view of San Francisco Bay, and the Golden Gate. The name might be designed and cut out of heavy brass or wood, covered with gold leaf, and inserted in the chimney or wall of your house in some way. I refer you to the article in the September number of this magazine. "Distinctive Devices for House Exteriors" for suggestions.

Should you be interested in carrying out any of the color schemes suggested, I would be glad, upon hearing from you, to send you samples of wall paper, rugs and fabrics suggested.

Query.—Have read with interest your "Inside the House," and wish for a few of your good suggestions for a new home. The exterior is "Germantown Colonial"—Bokara brick, white trimmings, formal entrance, and living porch at right.

The living-room is to be finished in dark oak, but the furniture is mahogany. What would you suggest for the color scheme; also kind and color of brick for a plain brick fireplace?

The dining-room is to be in white woodwork, blue walls, with mahogany furniture. Would you advise panels; if so how high? The ceiling is nine feet and the room 15′ x 16′—no high windows.

What do you consider the most practical finish for kitchen walls, woodwork and floor? V. R. P.

Answer.—As the walls of your dining-room are to be covered in blue, and I judge that the hall, dining- and living-room are closely related, the color scheme should be carefully considered.

It seems to me I should have the hall in brown, and the living-room in blue and brown. Rugs copied from Chinese patterns may be had at prices very considerably under the price of Chinese rugs, and these are in delightful tones of blue and brown.

The walls might be a good tone of brown grass cloth, or paper of grass cloth effect; the over hangings and other furnishings of old blue. A brown tone of tapestry brick, in which there are little specks of blue, would be appropriate for the fireplace.

Personally, I prefer painted wood for the kitchen, and light color for the wall. While this soils easily, it is also easily cleaned, and it seems so much more cheerful and clean than any other finish or color. If you wish to go to the expense of a linoleum floor covering, this is most satisfactory, and easily cleaned. If not, leave the kitchen floor perfectly plain. It can be kept in good condition and made almost white by conscientious cleaning.

Query.—Your letter in answer to questions regarding the decorations of my house received. Thank you very much.

Our home, as I mentioned before, is to be Georgian Colonial in style and we have decided to change the inside finish from oak to ivory white enamel throughout, in order to conform more nearly with the exterior. Liking your suggestions for the oak finish so much we wish you would suggest a color scheme suitable for the white finish. The dining-room I wish to keep in blue. Do you advise paneling in the dining-room and if so to what height?

There is a cornice in the living-room, (which is 15′ x 26′ by 9′). The windows are two feet from the floor and are 3′ x 5′ having fifteen square panes. Same in the dining-room.

The fireplace is very large, being 5′ x 8′ with the opening 2⅓′ x 4′. We wish to have it brick rather than tile. Can you suggest a color for the brick that would harmonize with white woodwork and mahogany furniture? Could the shelf of the mantel be mahogany or should it, too, be white?

Have you a suggestion on lighting fixtures? V. R. P.

Answer.—Enclosed I am sending you samples of blue paper (silk fibre for your dining-room, and a tan Java canvas for your living-room and hall) which it seems to me should be alike. The prices are marked on the back. For draperies in the dining-room I am sending a linen tapestry at $1.25 a yard. Into your dining-room you might add a note or two of this mulberry cotton velvet, which carries out the note in the linen.

For the draperies in the living-room I am sending a sample of unfadeable fab-

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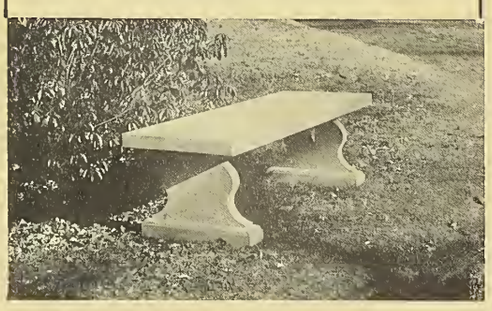


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ric, 50 inches wide and $2.50 a yard. One-half width, however, does for the over-hangings if they come only to the sill. I also enclose samples of cotton velvet in old blue and rustic brown, which you may need for notes of accent in the living-room.

I am sending a sample of a very inexpensive but effective fabric made of jute for portières and hangings in the hall.

I should not have the shelf of the mantel of mahogany. It should be white like the rest of the mantel.

It seems to me that lighting fixtures in a small house are best kept extremely simple. Charming effects can then be had by making silk shades of materials that harmonize with the furnishings of each room. Soft silk gives a much cosier and more homelike effect than glass shades and pendants, and I should be very glad to give you some suggestions if you carry out the color schemes I have suggested, or any definite scheme.

The dining-room might be paneled to either three and one-half or four feet, or as high as six feet.

I enclose a sample of a very effective net that would be appropriate for the window curtains throughout the house. The effect from the outside of the house is much more pleasing if all the curtains which hang next to the windows are alike.

Should you wish to use any of these fabrics of which I have sent samples, I should be very glad to purchase them for you which entails no extra expense to you.

Query.—Will you give me some suggestions of artistic furnishings and decoration for a large living-room 27′ x 16′ west front and south side, finished in dark mahogany wood. What would you suggest for the walls and lamp and general furniture? The ceiling is beamed and the house is a bungalow.

I also have a lounging room whose inside wall is finished in pressed brick, red, more yellow than dark, with green finished woodwork. What would you suggest for furniture and rugs, etc. This is strictly a family room and is on the southeast, with many windows.

Both rooms have open fireplaces.

What wallpaper would you put in a north dining-room, finished in quartered oak stained dark brown?

M. O. K.

Answer.—Hofi Cloth would make a very pretty wall covering for your lounging room. This comes in a number of weaves and colors, and costs forty-five cents per yard. I enclose a sample that you may know what the material is. The sample enclosed is an excellent color to go with your green woodwork, but there are other colors which I can send to you if you are interested.

In this room I would suggest having some large comfortable chairs of willow, stained to harmonize with your wall covering and woodwork. I will also send you samples of willow if you are interested.

As your dining-room is a north room you will have to use a paper with some warmth of color.

The paper with the little fleur-de-lis pattern of which I send a sample would make an exceedingly pretty room. While the little pattern is not blue it gives the effect of being so, and blue is usually very nice introduced in a dining-room.

I would suggest, if you use this paper that you get curtains with a little blue in them—Japanese towelling makes very pretty side curtains—and also use some pottery, such as the Brittany pottery, with blue and yellow in it. The rug for the dining-room should be in this case of old blue and yellow or buff. Many excellent rugs come in these colorings.

Since the woodwork in the living-room is mahogany, I should use a paper with some red in it. I am sending a sample of very handsome paper with gold, blue and red in it. Khiva rugs with their dark, rich colorings would be beautiful in this room if this paper were used. Hangings could be of the same tone of red, and some comfortable, spacious lounging chairs, and a large divan in the same colorings would be appropriate and harmonious.

If these suggestions interest you, I should be very glad to go into the matter more fully, sending you samples of the materials, furniture or rugs you might decide upon. This service entails no extra expense to you.

Query.—I should be very greatly obliged to you if you would kindly give me your advice in the following matter:

I am building a small house in the suburbs, and I am very much puzzled to know what color draperies and rugs to get for the living-room (size 14′ 8″ x 16′ 8″) the walls of which are yellow, the woodwork white and the furniture mahogany. What would you suggest? The curtains will hang between two white columns, which form the doorway leading to the entrance hall. Also, what color tiles would you suggest for the fireplace in this room? The woodwork, mantel, etc., will be white.

J. F.

Answer.—Almost any color will harmonize nicely with your yellow walls; brown, blue or green. My own preference would be for brown or for blue, according to the location of the room, whether it has a northern or a southern exposure. Whichever color you employ for your draperies and rugs I would suggest that you carry out in the tiling of the fireplace. By all means I should have the woodwork of the mantel white. Cotton velvet, which comes 50″ wide for $2.50 a yard would be excellent for your heavy draperies, and some of the unfadeable fabrics for the lighter draperies. I enclose a few samples of both materials.

If you do not feel that you can buy Oriental rugs, in which I would suggest that the colors be mostly blues and browns, the Caledon rugs which come in many excellent colors at $4.00 a square yard, or

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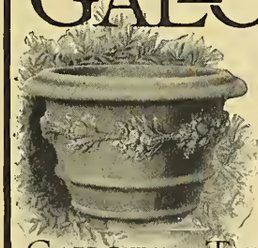
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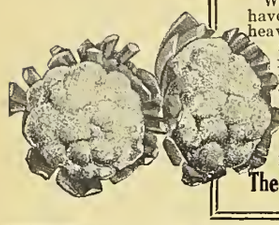


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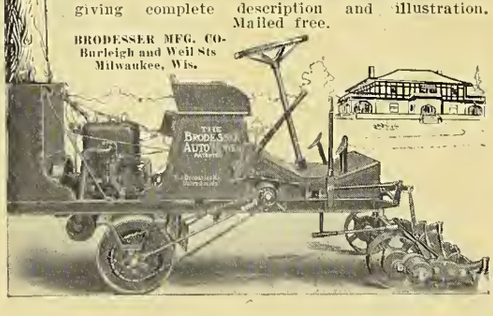
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It Makes Things Grow

rugs made of a plain color, Axminster or velvet carpet which you can buy for a moderate price are very effective and satisfactory.

In any case, the rugs should be a deeper shade than the walls of the room.

Query.—I expect to get new curtains and drapery for my living-room and I would be delighted if you would help me to get something stylish and in good taste.

The living-room is finished in oak with tan walls and the Wilton rug is a mixture of tan, old rose and blue. The room has four windows, one north, one south and two on the east.

The dining-room is finished in Mission furniture and has dark green walls with two windows on the south.

I want something pretty but not too expensive. Write me how long the drapery should be and would the same material do between living- and dining-room, for a portière? Would also like something inexpensive for pink and blue bedrooms.

M. H. C.

Answer.—It seems to me you could carry the color scheme of your living-room into tan and blue, bringing in notes of old rose (as in your rug) in an occasional pillow, piece of pottery, lamp and candle shades, etc. I am enclosing a sample of unfading fabric in tan and blue for overhangings and other draperies. For the dining-room draperies I am sending a sample of linen tapestry, in which there is a good deal of soft green. The living-room side of the portières (from your letter, I judge that the dining-room and living-room open into each other) could be lined with this old blue cotton velvet. The sample of curtain net which I am sending is very effective in the piece. The curtains should come slightly below the sill.

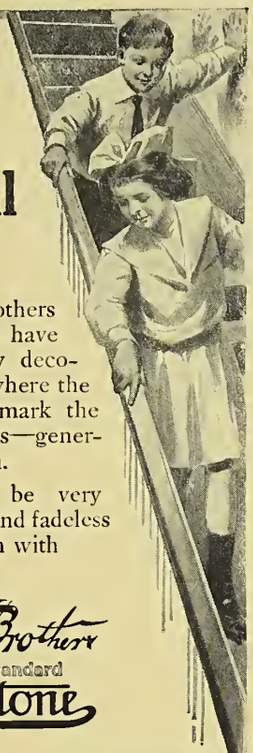
You did not mention what the woodwork of your bedrooms is. If it is oak, this sample blue and white cretonne will not be as good as though the woodwork were white. I will be glad to send you other samples, should these not be satisfactory, and to purchase any materials which you may select at no extra cost to you. Should you like to see larger samples of the cretonnes (that you may see the patterns and try them in your rooms) I will be glad to send them to you, if you will return them promptly.

Query.—I wish to furnish my living-room new. It is in an apartment house, and quite a good sized room. I wish to have an upholstered davenport. What color would you suggest and also what material for it. What color scheme would you use in the room, as the woodwork is finished in mahogany with an old-fashioned brick fireplace; and what other furniture would you suggest for the room?

M. E. D.

Answer.—If the woodwork of your living-room is of a brown tone, I would suggest carrying the color scheme out in brown and old blue. If the woodwork, however, is rather red, you had better

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carry the color scheme in a sort of red tone.

At the present time there are fabrics made in so many colors that you can make your scheme in terra-cotta, amethyst, or any tone that harmonizes with your woodwork.

I would suggest that the wall be a warm tone. "Japanese grass cloth" makes an excellent background for the furniture, pictures and coloring that are introduced into the room. The curtains I would make of a simple figured net or scrim; or if you have a plain paper, you might use a lining tapestry with the tones you select for your room, either old blue, as in the blue and tan scheme, or some tone of red, as in the other scheme suggested. For handsome lining tapestry with designs of peacocks and other birds, and beautiful flower patterns can be bought for $3.50 per yard, and as they are fifty inches wide, a width can be split, using half for each side curtain.

For the davenport covering use a plain material, cotton velvet or velours, crinkled tapestry, or any other fabric, the color of which is the predominating tone of your figured goods, either old blue or some tone of red. If you use a figured paper, reverse the scheme, using plain overhangings. The davenport might be plain, or some unobtrusive pattern.

The chairs in the room may be upholstered in some figured material. I would suggest that, if the room is large enough, your davenport be placed in front of your fireplace, at a comfortable distance; and back of that, that you have a large reading table on which are your books and lamp.

Comfort should be the keynote of the living-room, and I should see to it that there are one or two comfortable, upholstered chairs, and you could also have one or two easy chairs of willow, stained an appropriate color, one or two small tables for the tea tray, and other necessities, such as large vases, and jardinière for plants and flowers.

It depends upon the character of your living-room, whether you want cases and a desk.

As the trimming of your room is mahogany, I would suggest that your furniture be also of this wood.

Query—Your articles on interior decorating have interested me, and as we are about to build would like suggestions from you.

Our entrance hall, with an east frontage, is six feet wide, with an extra large archway leading to living-room, has a wide stairway at west end. At west end of living-room, which is twenty-two by thirteen feet, there is a fireplace six feet wide, with bookcases on either side. French doors on south opening out onto sunporch. At east end there are three windows (in group).

As living-room and hall are practically one, I suppose their woodwork would be the same. What finish would you sug-

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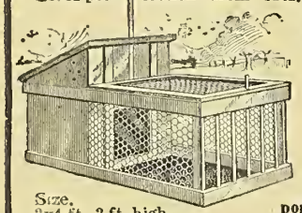
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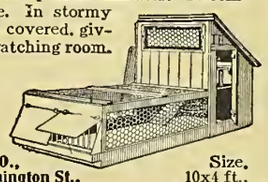
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Size, 10x4 ft., 5 ft. high.

gest for them and for the stairway, which will have a railing on one side?

What colored brick and tile for fireplace and mantel? What finish of woodwork and built-in bookcases? Also, color scheme of walls. Would prefer not to use paper. Our furniture for living-room is a mixture of mahogany with black leather cushions and some of oak finished in dark mission style.

Now for the dining-room. Would you advise us to have paneling, and how high? I am fond of white woodwork in dining-rooms, but could we have it with our golden oak furniture, which we are going to have finished a dark, dull finish?

Should the paneling, if we have it, be white, too?

Will white woodwork be right upstairs with mahogany finished doors?

If you will kindly answer my questions I shall be very grateful indeed.

M. G. J. P.

Answer—By all means, I should have the woodwork of the entrance hall and living-room the same. English oak, finished dull like the enclosed sample, makes a very satisfactory color for living-room and hall. The bricks I would have red—an orange, gray red. By that I mean not too brilliant, and the tiles in the fireplace I should have an orange brown, that would harmonize with the color of the bricks and with the wall as well. I enclose a sample of grass cloth that makes an excellent wall covering for living-room and halls. This is $4.50 a roll of eight yards, but instead of only eighteen inches wide, as most wall-papers are, it is thirty-six inches wide, so it goes just twice as far.

The height of the paneling for the dining-room would be regulated by the height of the ceiling. I think white woodwork for a dining-room is very satisfactory and ornamental as well. Mahogany furniture is more often used in a dining-room which has white woodwork, but I think your oak furniture finished dark will not be out of place. White woodwork with mahogany doors is quite appropriate for the bedrooms.

I shall be glad to be of any further assistance to you, either in making suggestions or in purchasing any material that I may suggest for you. This service entails no extra expense to you.



A Gorgeous Display

A MOST gorgeous flower display recently seen was in the most beautiful shades of reds and yellows. The flower bed extended across the front and around one side of the house of one of my flower-loving neighbors.

The house is on a slight elevation, and the ground slopes from the flower bed,

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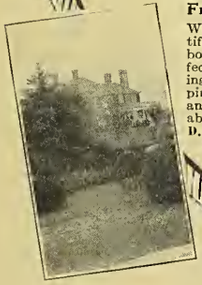
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which is level. Next to the house was planted a row of yellow cannas. In front of these was a row of scarlet salvias, or scarlet sage as it is more commonly called. On the extreme edge of the bed, a row of yellow dwarf nasturtiums grew lustily and made a fringe varying in color from pale lemon to deep orange. Scattered about irregularly throughout the bed were climbing nasturtiums of every known shade of red and yellow. These climbers were allowed to wander at will, and covered the ground and ran down the slope into the grass.

This brilliant display of reds and yellows looked much handsomer than one can imagine from a description. This same neighbor always plants climbing nasturtiums among the dwarf varieties and lets them cover the ground and make a carpet around the more upright plants. In this way a solid mass of blossoms and foliage is obtained. J. V. Roach



Medicinal Leaves and Herbs

THE Department of Agriculture has issued a bulletin on leaves and herbs used as medicine. Nor is this the first publication put out by this Department on the subject of medicines, the others being Weeds Used as Medicine, Root Drugs, and Medicinal Barks.

Collectors of medicinal plants have made such insistent demands on the Department for a guide in their work that a description of thirty-six medicinal plants, including only such as are in most common use, has been prepared by direction of the Secretary, fifteen of these being mentioned in the Eighth Decennial Revision of the United States Pharmacopœia.

Each plant is listed under the name in most common use, but synonymous common names, and the pharmacopœial name, if any, are also given, that no one should have difficulty in recognizing the plants familiar to him, or in identifying an unknown one, if of the series, from the description given.

Perhaps the best known plants included in this bulletin are peppermint and spearmint, which are not only found in the wild state, but are also cultivated for the distillation of oil, an important American industry. Witchhazel, almost a household word, is found in low, damp woods from New Brunswick to Minnesota, and south to Florida and Texas. The soothing properties of this plant were known to the Indians, and it is still employed for the relief of inflammatory conditions.

Wintergreen is described as having stimulant and antiseptic properties, though its chief use seems to be as a flavoring agent.

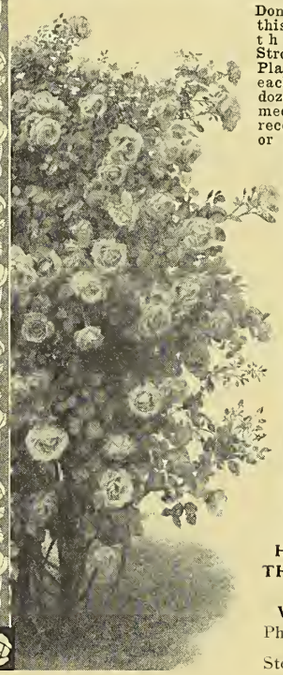
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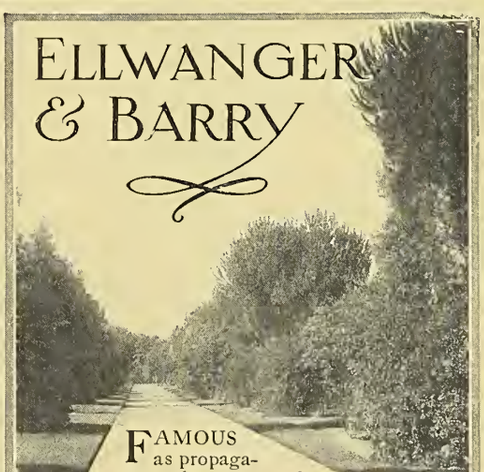
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range, being found from Maine to South Carolina, Texas, and westward to California and Oregon. Jimson weed, a common weed in field and waste places, is found almost everywhere except in the North and West. The dried leaves are frequently smoked or the fumes inhaled, as a remedy for asthma. Catnip, familiarly associated with a tea for babies, is described as a common weed naturalized from Europe. It is noted for its quieting effect on the nervous system.

Boneset is another familiar plant in many households, the leaves and tops of which form an old and popular remedy in the treatment of fever and ague. Pennyroyal, aside from its value as an aromatic stimulant, has an odor which is very repulsive to insects, and is therefore much used for keeping away mosquitoes and other troublesome insects.

Among the other plants not in such common use, mentioned in this paper, are foxglove, gum plant, bugleweed, balmony and skullcap. Tansy, wormwood, fireweed and fleabane are described as furnishing useful oils.

A Good Inexpensive Concrete Fence

A CONCRETE fence which should prove of interest to our readers was recently designed by R. V. Moss, city surveyor of New York City, for the Glen Ridge Tennis Courts. It is strong and durable, of neat appearance, and is of a style that can be quickly erected and at low cost.

At 12′ 1″ centers three-inch I-beams 12′ 6″ in length were sunk in the ground to a depth of two feet six inches, leaving ten feet of post above the surface. The flanges of these beams were wrapped with metal lath to a height of six feet above grade to carry cement plaster.

A 2″ x 3″ spruce bottom rail was placed between the posts along the ground and a top rail of the same size at a height of six feet, with reinforcing plates. The concrete was then applied on the reinforcing plates to a thickness of three inches.

Above the reinforced concrete portion of the fence, wire netting is fastened to the height of four feet, making the entire height of the fence ten feet, six feet of which is concrete and the remainder wire.

The cost of this type of fence is extremely low, especially for the concrete portion of it, which in this case is increased by the fact that the I-beam posts extend four feet above the concrete to carry the netting. The concrete portion alone costs about twenty-five or thirty cents per square foot, including the contractor's profit, which made the cost of the six-foot fence from $1.50 to $1.80 per lineal foot. The average fence costs from $2.00 to $2.50 per foot—is neither as easily nor as quickly erected, and seldom as strong and durable, and concrete again proves its superiority in a new form.



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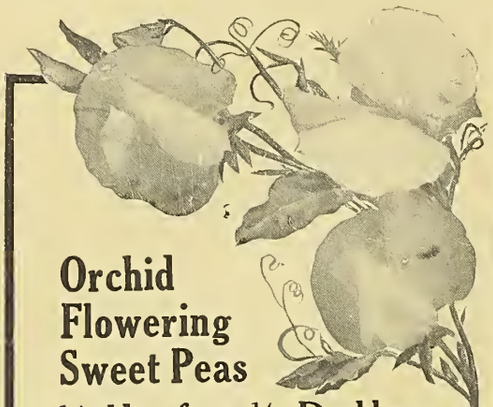
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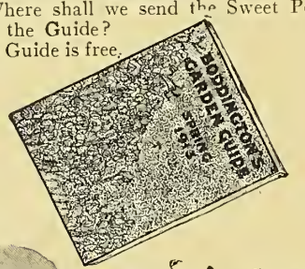
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Using Gladioli to Succeed Tulips

TWO beds three by nine feet in the garden were planted with one hundred mixed tulips; when these appeared above ground in the spring, it was decided to have gladioli succeed them. A boring tool was made from the handle of a discarded spade; this was sawed off at the curve, sharpened to a point, and eight inches up a notch was cut in the wood to mark the depth for planting; this depth obviated the necessity for staking. The last week of April, when the ground was soft after a rain, rows of holes were bored between the rows of tulips, and one hundred large bulbs of gladioli in light mixed colors (pink and white) were planted.

The mixed tulips provided an abundance of bloom from the last of April till the beginning of June, and were followed very shortly by the gladioli, which lasted till October. The greater number of these gladiolus bulbs sent up two stalks of flowers each, and great quantities were obtained for cutting. Aside from the display provided, each gladiolus bulb gave an increase of two to three good-sized young bulbs, making a considerable quantity for next season's planting.

B. M. STRAIN



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WHEN the care of her family is left to the hen alone, usually only the fittest survive. In some instances where the stock is strong and weather and ranging conditions are favorable, the hen will raise her brood with little human aid, but thoroughbred stock usually requires some supervision lest the hen overtax the strength of her progeny in her quest of insect life.

While the hen cannot cover more than thirteen or fifteen eggs satisfactorily, she can brood twenty chicks and even more with ease. With a little care she can often be induced to adopt others if they are put under her at night.

The hen mother must be kept in a coop for the first two or three weeks, and at the end of that time given very limited range. The chicks, however, may be allowed to roam farther, as they will not go beyond the limit of their strength.

Dry-floored coops must be provided for shelter with dry, clean soil for range. Soil sweetened by the growth of vegetable life the previous year is safer for young chicks. I would not attempt to raise young chicks upon damp, clayey soil. If one has no other available site, however, the Rhode Island Reds are best adapted to take the risk.

A light, sandy soil is far safer, as the moisture filters through it.

Young, newly-hatched spring chicks should not be permitted upon the ground for a week at least, if the weather is chil-



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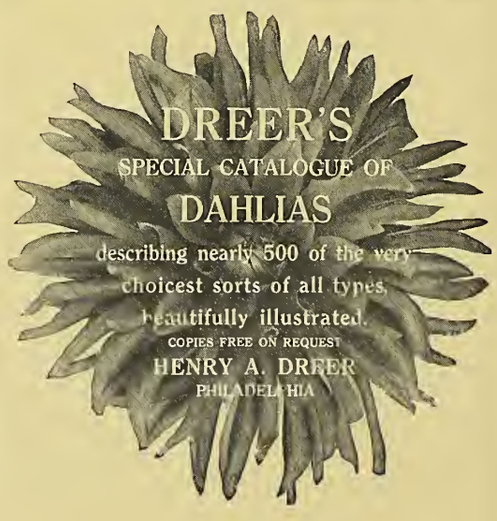
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"Hardy Garden Flowers" is too expensive for promiscuous distribution, since each copy costs 30 cents and requires 3 cents postage. If you have a garden of perennials, or contemplate planting one soon, and want to know how to select the most beautiful kinds and use them to the best advantage, we will be glad to send you a copy by return post.

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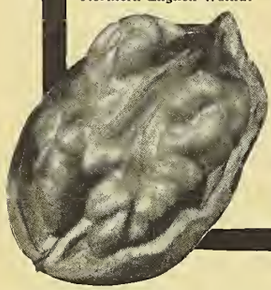
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ly. With those hatched in late May or June, the case is different.

Dry-mixed grains of size suited to the young birds are better than wet mashes for early feeding. The ready-prepared chick foods are usually safe and in proper proportion for the young chicks. Fresh, clean water, and coarse sand for grit should be supplied them. Ranging chicks, however, will procure the necessary amount of grit.

A young growth of oats is relished by chicks and aids in their rapid growth.

When the chicks have grown to a good size, the hen will abandon them. Chicks of this age will do better if kept in groups of twenty-five or thirty than if forced to crowd together at night in greater numbers. Care must be taken that the coops are well ventilated. A coop that has one end covered with canvas gives satisfaction, but there should be an additional protection of small-meshed poultry wire securely fastened on either under or over the canvas or burlap covering to prevent wild animals from harming them. In warm summer weather the burlap curtain may be removed.

Where successive hatchings of chicks bring together different-aged groups, some means of separating them at feeding time must be devised, else the younger birds will suffer. Uniformity of growth depends upon uniformity of strength in each group. Feeding cages made by tacking vertical strips to box-like frames, so as to admit chicks of different sizes, are about the most satisfactory scheme used. Three or four cages to accommodate the different ages are convenient. For younger chicks the strips may be placed about two inches apart. Those of the larger cages being about three, five and seven inches apart. M. ROBERTS CONOVER

The All-Phlox Border.

A HARDY perennial border in the height of bloom in July and August—the time when most perennials, having passed their season, show the effects of midsummer heat, and blossom but fitfully or not at all—is far too rare a sight in our American gardens. Phlox is the plant par excellence which can make the hardy border a midsummer blaze of glory.

A few other plants, such as the Japanese anemone, can with dignity and fitting grace aid in such an office, but since phlox is supreme among the mid-season perennials, some borders or beds in every garden, should be devoted to little else but phlox. Feeling sure that those who have not tried an all-phlox border will be very well pleased with it, I give a few simple suggestions for its formation and care.

The main part of the border should be filled with a few—only a very few—of

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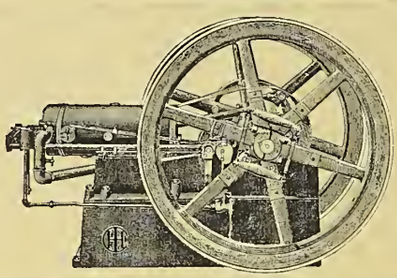
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the best of the named varieties of *Phlox paniculata* (called sometimes *Phlox decussata*), grouped in as large masses as the space allows. As there is wide variation in the color and height of the different named varieties of this species of phlox, these few kinds should be chosen and arranged with a view to color harmony and height. For white, which harmonizes well with every color and shows more at night, the variety Jeanne d'Arc is a most excellent one, having large and perfectly formed flowers which open a little late, making fresh and fair the very hottest and driest time of the year. One might well have a long mass of this at the back of the border and extending its full length, the mass widening at the center to come almost to the front. To the right and to the left of this forward projecting white mass, Coquelicot and either Pantheon or Iris may be grouped, the two groups being separated by the white. The Coquelicot, on the right, is a strong grower and a popular favorite, with fiery scarlet, carmine-eyed blossoms. The Pantheon, on the left, has large flowers of a beautiful salmon-rose color. The variety named Iris, if preferred to Pantheon, is more unique among these phloxes, being bluish violet with blue center, its individual flowers being very large and perfectly formed.

Much is also added to the attractiveness of the whole bed if a narrow, full-length border of *Phlox subulata* be planted in front. This, while exceedingly different, is just as true a perennial phlox as the above. It grows only a few inches high, has narrow, evergreen leaves, and blossoms very early in the spring, being then literally covered with bright bloom. It often blooms again, more sparingly, in autumn. As a final touch this species adds a minor charm to your all-phlox border at a time when it would otherwise be entirely void of bloom, and its pretty mat of foliage enhances the beauty of the bed at all seasons. It is sometimes called "moss-pink."

The phlox border responds generously to rich soil, well-drained and not too heavy, but will grow in any good land. Several thorough drenchings of the soil in dry seasons greatly increase the wealth of floral display, as the plant loves an abundance of moisture. The roots may be had of reliable growers either in early spring or in the fall. If secured in spring, it must be in the very earliest part of the planting season, as soon as the ground can be dug, for after the buds have started it is a poor shipper and not likely to do as well. In the fall there is less need of haste, for after the season's growth has been made and the foliage ripened, the plants may be shipped and transplanted at leisure during a more or less extended season from, say, the middle of September until sometime in October. For this reason the fall is preferable, and altogether the safest time to plant phlox. The roots should be carefully spread and the plants set well apart. After the profusion of June flowers has



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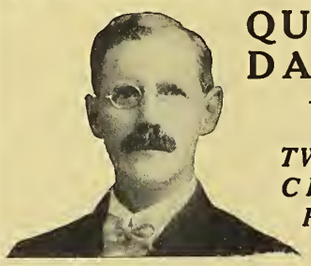
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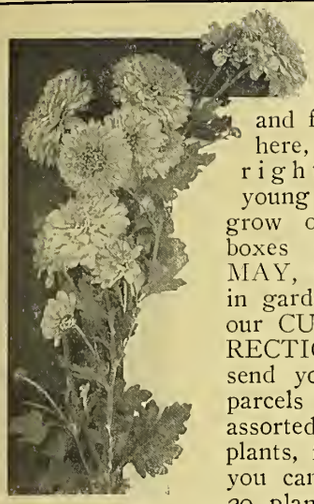
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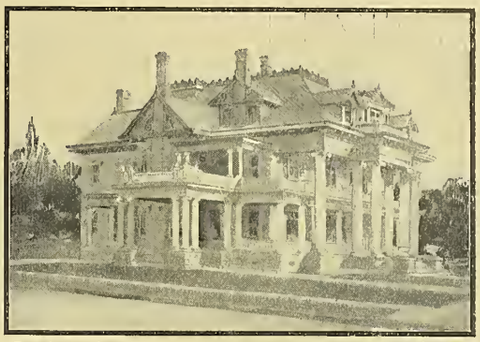
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Mr. Embury, whose characteristic designs for small and large country homes have become so well known throughout the country, has based the majority of these designs upon the flexible style of architecture that was evolved by the Dutch settlers through northern Jersey, parts of Long Island and, to some extent, along the Hudson above New York. Mr. Embury's contention is that the Dutch Colonial—or gambrel roof—type, presents the most logical and, at the same time, the most attractive solution of the problem of securing the most room and the most charming exterior appearance in a home, coincidentally with a minimum of cost.



Illustrated, $2.00 net; postage, 20c.

Reclaiming the Old House
By Chas. Edw. Hooper

It was Alfred Austin, poet laureate of England, who said he could not understand why a man should prefer to build a new house or to occupy one built for him rather than adapt an old one to his needs. Many people undoubtedly feel the same but are perturbed by a lack of knowledge as to the proper procedure in reclaiming an old house, so as to preserve the charm of the past while incorporating the present-day conveniences. Mr. Hooper shows just how this may be done and supports his directions with an abundance of splendid photographs, plans and diagrams. It is an essentially practical book.

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Modern Farm Buildings
By Alfred Hopkins

Mr. Hopkins is known throughout this country and abroad as an architect who has specialized in stables and farm buildings of all kinds. In his many years of active practice he has developed a knowledge of methods, materials and design that is unrivaled; and best of all, Mr. Hopkins has put most of this knowledge into a book. Photographs and diagrams illustrate practically every detail, and it is astonishing to find to what extent modern scientific methods have revolutionized the art of building the hay barn, stable, sheep fold, ice house, dairy, garage and all the rest.

Illustrated, $3.00 net; postage, 20c.

The Gardener and the Cook
By Lucy H. Yates

To keep a constant supply of fresh vegetables upon the table, and to grow those that were the most tasty, was the ambition of the author of this book. She enlisted the co-operation of a clever cook and a capable gardener, and gives the reader the fruit of her experience. Not only does the book tell what vegetables and fruits are profitable to grow, but gives the instruction to transform them into delicious courses, tempting salads, preserves and jellies.

Illustrated, $1.25 net; postage, 15c.

The Home Poultry Book
By E. I. Farrington

Here is the just the book for the beginner who wants to keep a few hens to supply fresh eggs for the table. No elaborate systems or expensive fixtures are advocated. Good, sound common-sense is the keynote of every chapter. Detailed plans and photographs of successful small houses are given, together with specific information covering every phase of poultry-keeping.

Illustrated, $1.00 net; postage, 10c.

Lilies
By H. S. Adams

This is the first in a series of Flower Monographs which deal in an instructive and authoritative way with the more important families of popular flowering plants. Mr. Adams, who is well known as a writer on horticultural subjects, has given us in this book the last word on the lily—its classification, the peculiarities of varieties, and its culture indoors and in the garden.

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Golf for the Late Beginner
By Henry Hughes

The title describes precisely the purpose of this practical book. The author himself took up the game in middle age, and with his experience fresh upon him, explains the correct principles of golf in a way especially helpful to the late beginner. The illustrations are from actual photographs, showing correct and incorrect methods, also the various positions for the different strokes.

Illustrated, 60c. net; postage, 5c.

The Children in the Shadow
By Ernest K. Coulter
Introduction by Jacob A. Riis

Mr. Coulter, who was for ten years Clerk of the Children's Court of New York City, presents graphically and forcibly the obligations of the State toward the "citizens of to-morrow." Forty years ago children were being hanged in England; to-day in many cities of the United States they are confined in jails with hardened criminals, and there is still much work to be done in the establishment of children's courts. The author of this vitally interesting book points out the evils of congestion in the tenement districts of the larger cities, and suggests remedies for legislation to curb this potent factor in making for delinquency among the children. He traces the development of the Children's Court as it is to-day, and shows its inner workings. There is also a chapter on the Big Brother Movement, of which Mr. Coulter was the founder.



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faded away, you will be proud indeed of your phlox border when it comes into its glory.

Ralph E. Danforth



A Garden of Delight in One Plant.

I HOPE, for the increased beauty of their gardens, that before another planting season, many people will learn of the merits of the beautiful new German rose—Tausendschon or "Thousand Beauties." This is a hybrid, from crossing a rambler with a tea, and the wonderful variety of coloring has led to its name. I planted a small rooted cutting next a high wire fence two years ago this spring. It grew rapidly, and the following year showed many blooms, in semi-double form, of a dainty pink. As the coloring was quite uniform, I concluded that it was just another case of over-worked imagination on the part of the descriptive catalogue writer, who said no two blooms would be the same. By the second summer the bush covered over twenty feet across the fence. On the 30th day of May—Decoration Day—we cut three large clothes-baskets of blooms, leaving the plant still so loaded as to fill us with wonder. The individual flowers are large for its class—fully three inches across—and of an elegant, graceful form. It seems to need several years of growth to produce flowers of the wonderful color variations—as the second season's bloom showed all that was promised by catalogue description—and more. As a matter of fact, its full variety could never be described. Palest of pinks, deep rose, without shading, pink and rose, blended like an apple blossom, pink, mottled and streaked with red. A beautiful form is of pale pink with ruffled edge of red like the Tulip class of roses.

Many other variations are like those found in the Dianthus or pinks. Another interesting peculiarity is the varied form of stems. Thousands grow on their own graceful individual stem, but all over the plant are thrown out strong shoots three or four feet long bearing each a bunch or cluster of ten to twenty roses, each a bouquet in itself, and in this cluster will be found no two of the same shading. These strong wands of bloom are fine for decoration, on a large scale. Those on single stems make the most graceful of center pieces. Added to everything else is the keeping quality of the flowers—on the bush. It keeps as a cut flower like a camelia, being still fresh and perfect a week after cutting.

The bush bloomed freely for three months. As a bush without bloom, it is an ornament through the year, its dark, slender, glossy leaves adding to the garden's charm in the winter. It is said to be hardy in all climates, and it certainly would be hard to imagine it taking on delicate airs, in any situation. E. S.



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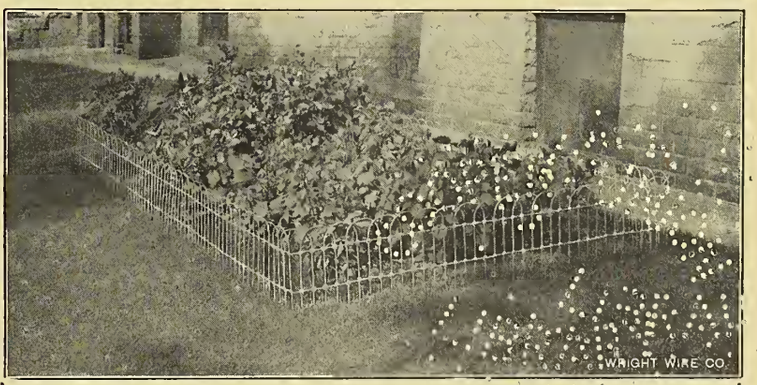
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The coloring of this flower is exceptionally beautiful—a rich, soft pink, shading to a darker tint and in striking contrast with a brilliant carmine patch on the minor petals. Such coloring does not produce the delicate, subtle beauty that is the charm of America, nor the majestic beauty of Rajah, nor the poetic, winsome beauty of Spring Song and Myrtle, nor the quiet stateliness of Daisy Rand. But the Pendleton has a beauty all its own; a brilliant, dashing, compelling beauty that makes you stop and admire.

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FLOWER GUARDS

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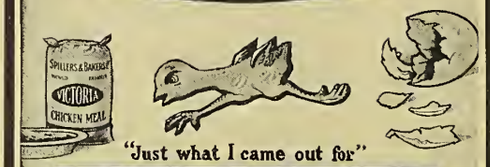
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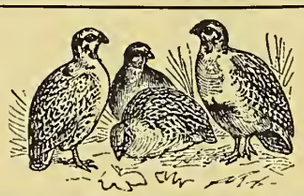
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Of course there are other articles in the March number — eight others, in fact. The desolate island of St. Helena, Florida, Germany, Canada, New Mexico, Tunisia, France, and British East Africa, all come in for the attention of authors who know them well.

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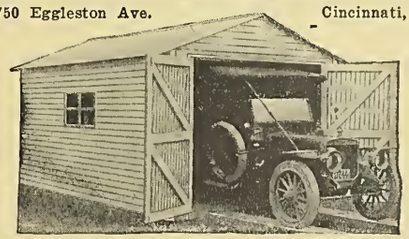
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Few have had the privilege of meeting Mr. Roosevelt at close range. The millions who know him as speaker, soldier, public servant, will now have the opportunity to know him intimately. He has taken part in so much and has done so many things that what is now to be told is largely a matter of selection. He will relate serious and amusing incidents—will give sidelights on happenings that have interested and puzzled the Nation. He will write about events as he has known them personally—as a participant.

So much of the personal side of public events as may properly be made known at this time Mr. Roosevelt will relate in these papers. He will tell of the Standard Oil and Sugar Trust prosecutions; of the voyage of the battle fleet around the world; of the creation of the Inter-State Commerce Commission; of the Panama Canal; and of many other historical events in which he had so large a part. He will deal not only with events, but with the men who made the events.

To Begin February 22

The Outlook

New York

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FORECAST OF SPRING FASHIONS — **February 10th**
The earliest authentic news of the Spring mode.

SPRING PATTERNS — **February 25th**
Working models for one's whole Spring and Summer wardrobe.

DRESS MATERIALS AND TRIMMINGS — **March 10th**
How the Spring models shall be developed.

SPRING MILLINERY — **March 25th**
The newest models in smart hats, veils and coiffures.

SPRING FASHIONS — **April 10th**
The last word in Spring gowns, waists, lingerie and accessories.

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Forecast of Spring Fashions	Feb. 15
Spring Pattern	March 1
Dress Materials & Trimmings	March 15
Spring Millinery	April 1
Spring Fashions	April 15

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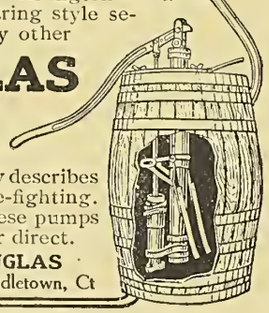
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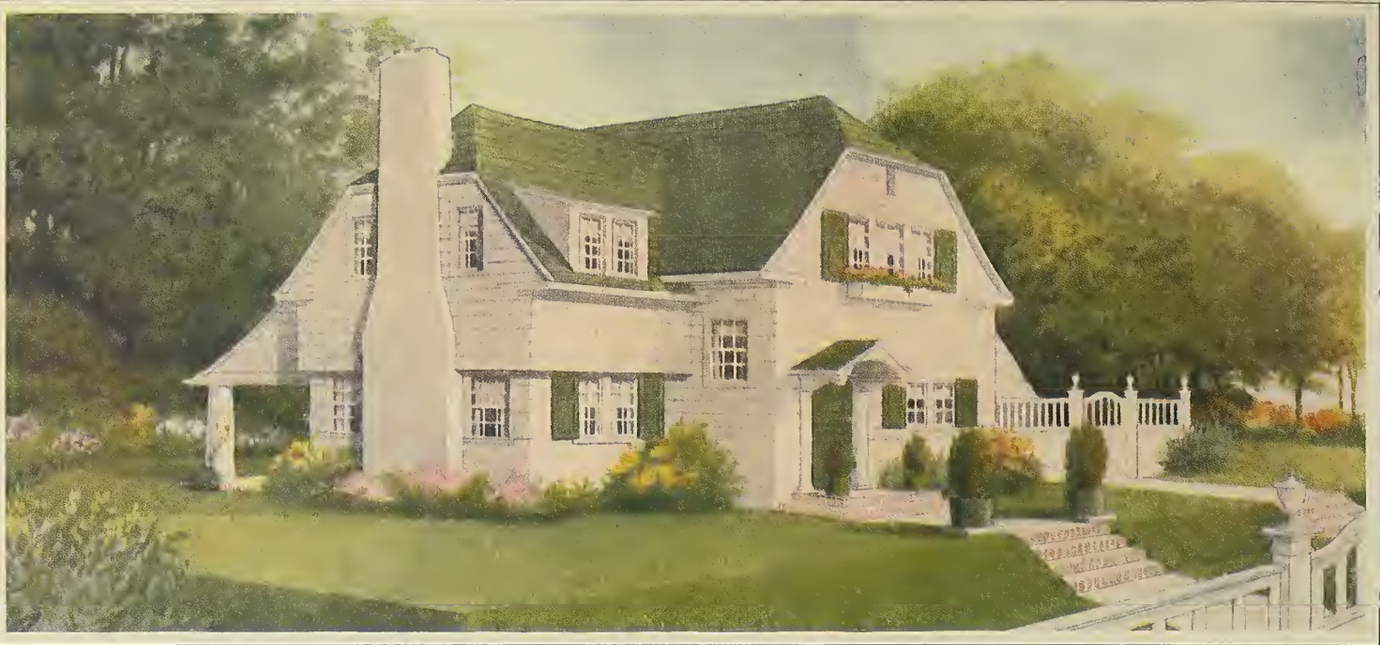
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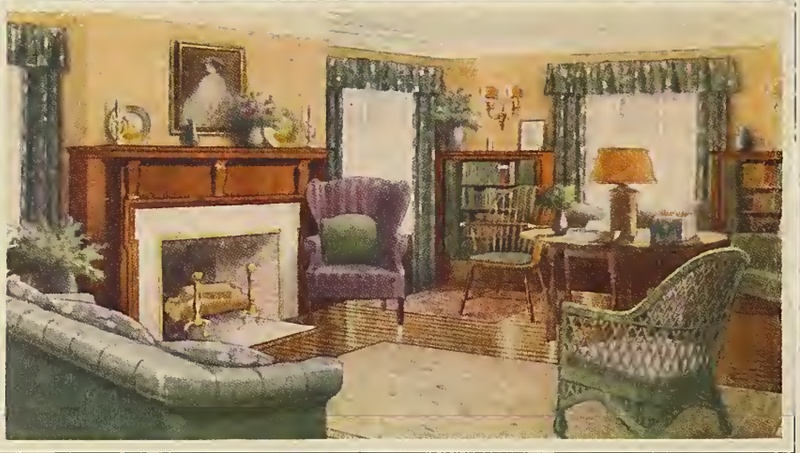
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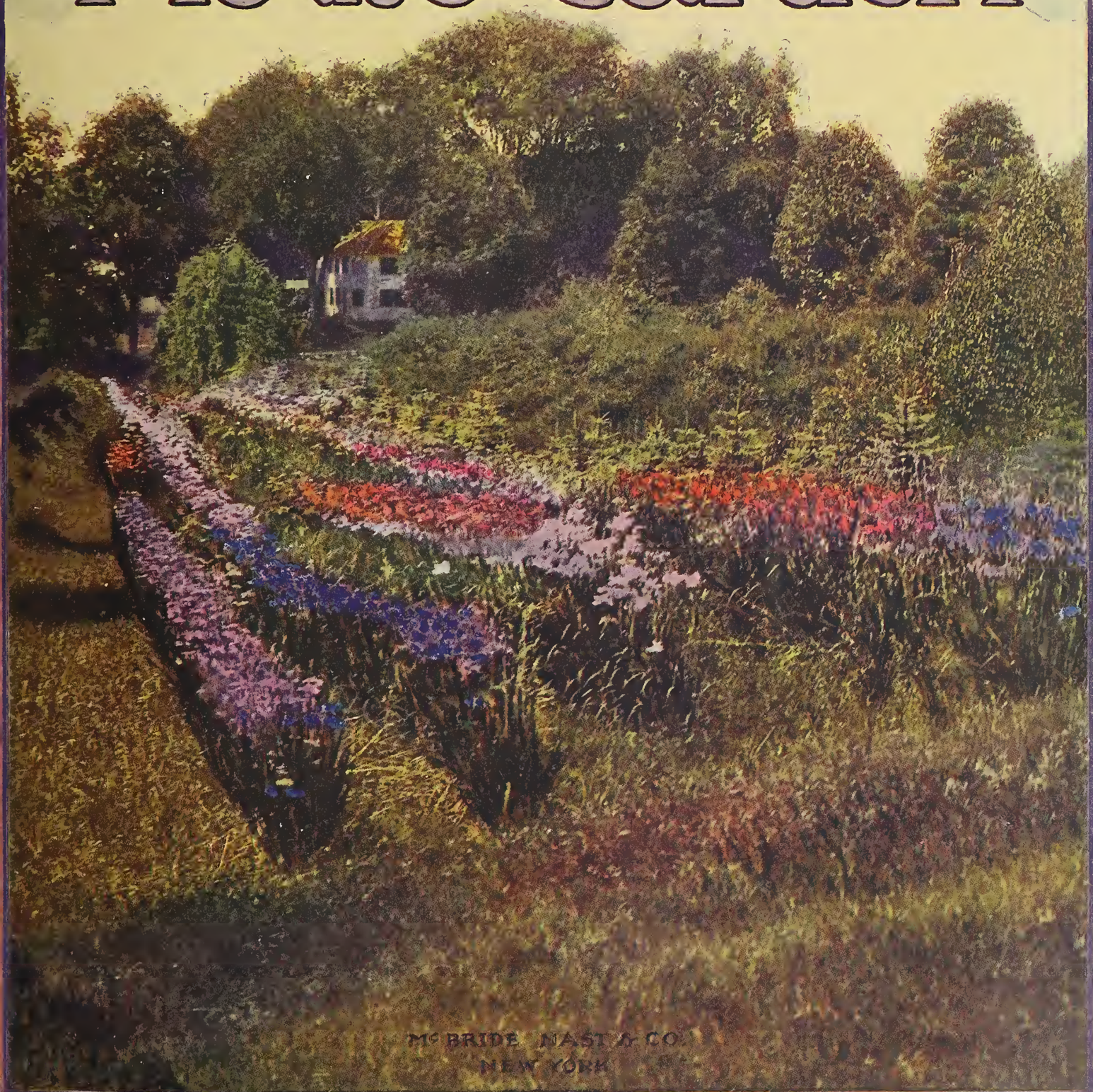
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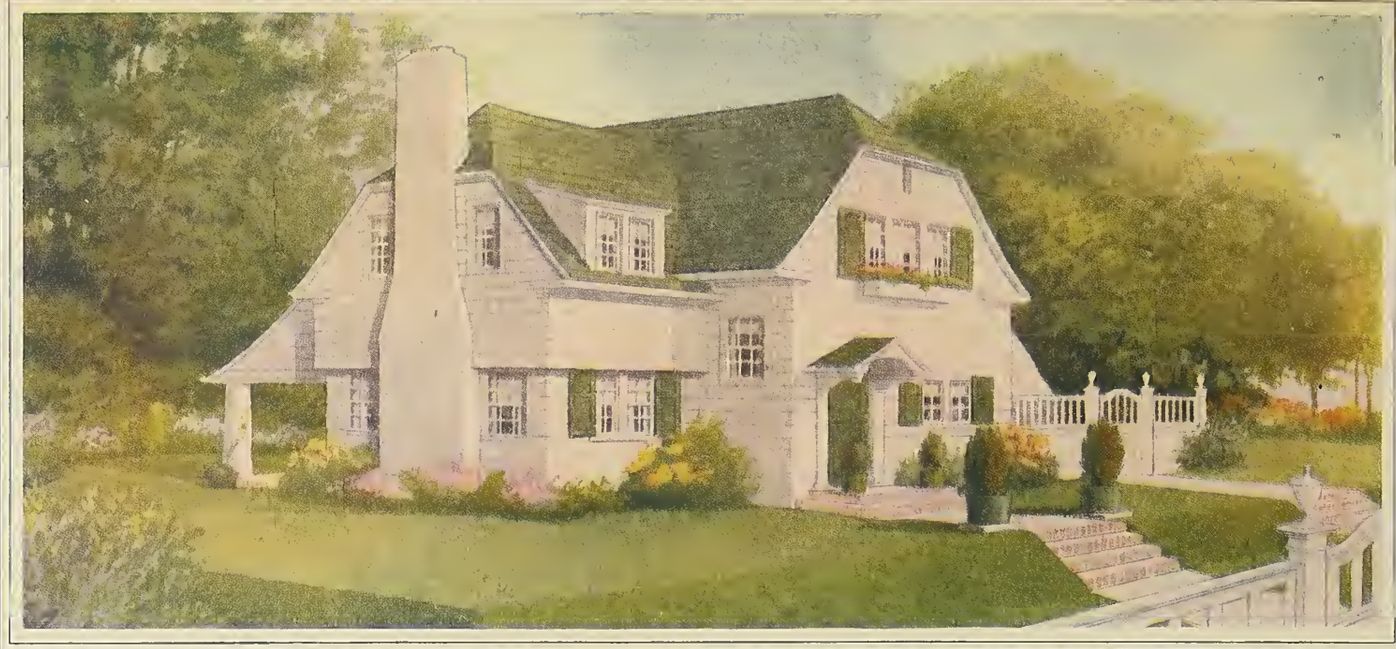
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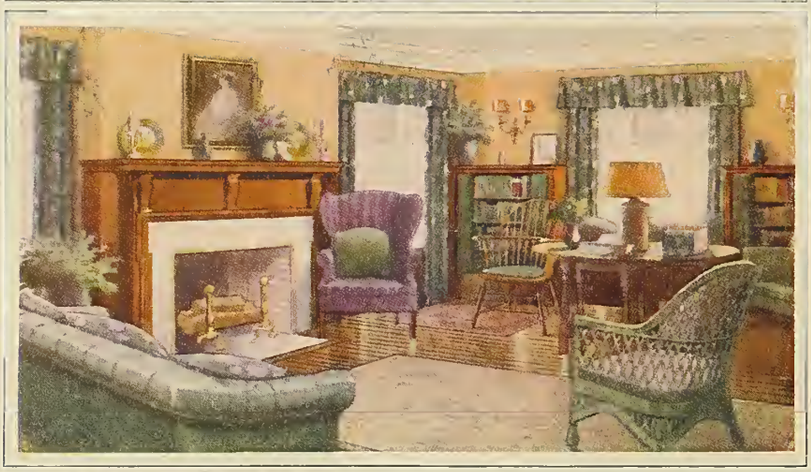
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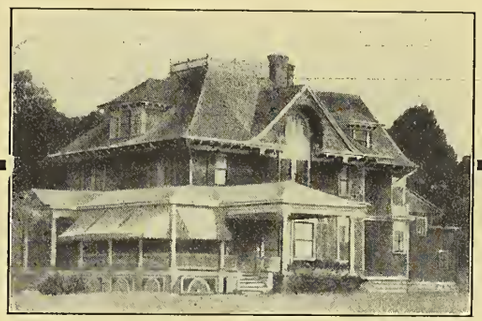
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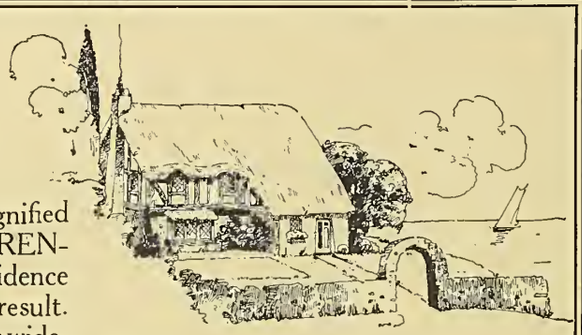
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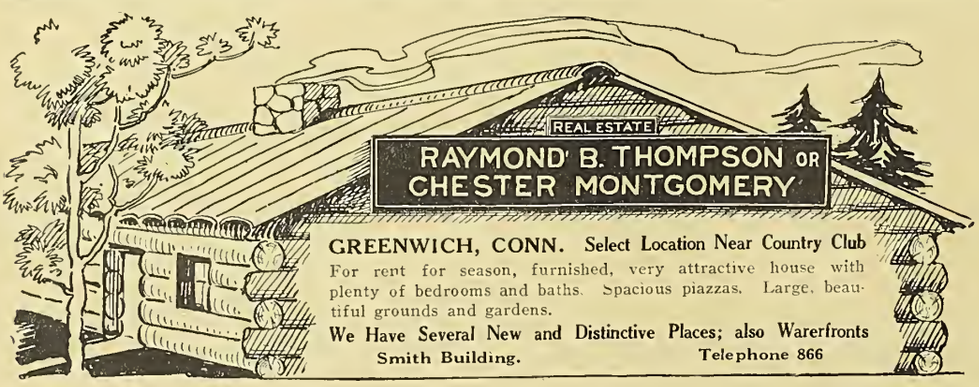
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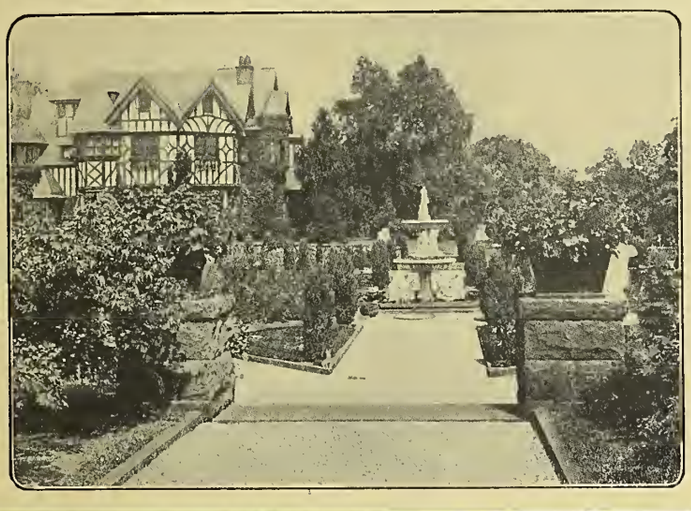
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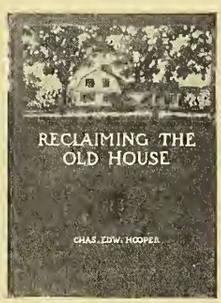
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A half-timbered house adjoining Grenwolde, Great Neck

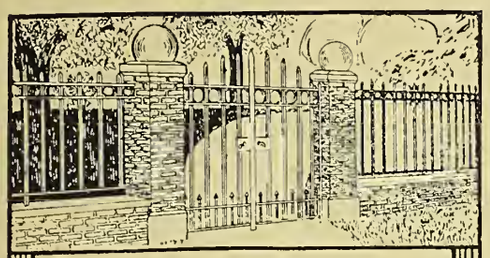
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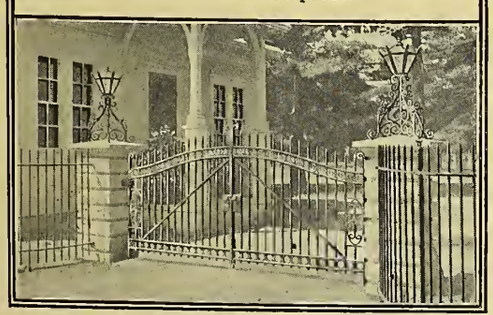
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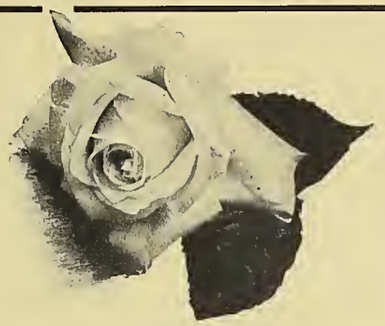
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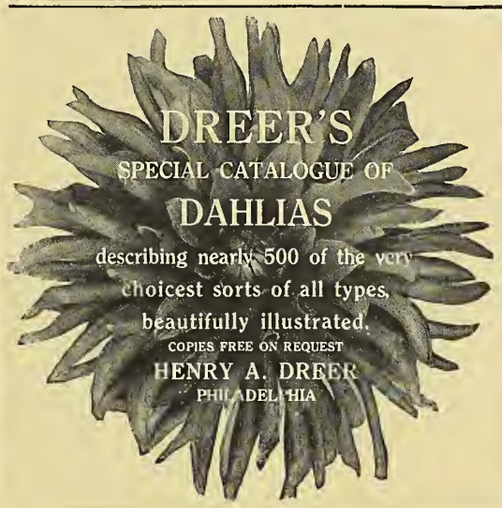
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CONCERNING OLD BLUE CHINA

THE writer of this department has had a small deluge of letters regarding Old Blue China since the note on the platter of "New York from Brooklyn Heights" was published. Many an owner of a piece of old blue, no matter by whom made or of what pattern, has jumped to the conclusion that his piece was a treasure, and has had to be undeceived.

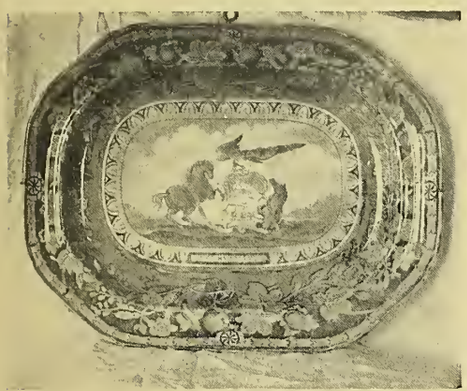
In the first place, this blue ware, properly speaking, is not china; it is earthenware, which in the biscuit state is too porous for domestic uses and has to receive a coat of glaze. Most earthenware is opaque, while porcelain is translucent. Semi-china is earthenware with a white or chalk body, highly glazed, and made to look as much like porcelain as possible; a fake, in fact. Stoneware is a very hard pottery more like porcelain than earthenware and capable of being used without being glazed. It is frequently found glazed, however, and the glaze employed is commonly salt thrown in the kiln while the ware is being fired.



A plate by Adams that is worth but fifty cents

Now, the earthenware which has on it the patterns in dark blue, whether historic or commercial, was made to be sold at a small price. The blue, cobalt, was cheap, effective and so dark that it covered all the defects in the earthenware. The patterns were printed on by a method invented by Sadler and Green, two Liverpool potters in 1756, and for some years they printed for other potteries as well as for themselves, even Wedgwood employing them. By degrees the secret became known and "the potteries" in the district in Staffordshire comprising the towns of Tunstall, Hanley, Burslem, Stroke, Longton and Fenton, all took up the method.

Most of the "historic china," so called, was made between the years 1800 and 1830. The American market was found to be a rich one, and the English potter, with small regard for the history and trials of his own country, turned to the struggle between England and America for many of his designs. The battle of Bunker Hill, a number of sea fights, portraits of our heroes, the Erie Canal, Hudson River, cities and towns of importance and public buildings were all utilized to make their tableware and domestic crockery attractive to the Americans, colonists no longer.



This platter, with the arms of Pennsylvania, is really valuable

Very little earthenware or pottery of any kind was in general use before the Revolution, and such as there was was confined to the coast town whither it had been brought by sailing vessels which touched at Oriental or Dutch ports. By the end of the eighteenth century, perhaps as early as 1780, money began to be quite plentiful with us. We felt able to improve our domestic services. Trenchers and pewter ware were old-fashioned, and the fine new earthenware sent over from Staffordshire—mind you, this included Wedgwood—met with a ready sale. Even Worcester, the aristocrat of early English factories, made printed ware, and their "Tea Party" (not the Boston one) and "King of Prussia" designs made by Hancock became most popular.



A good looking old teapot, but it will hardly find a purchaser

The question sometimes arises: "If so much of this blue ware was sent to this country, what has become of it?" 'Tis

(*Continued on page* 342)

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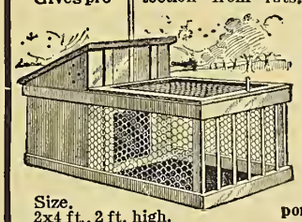
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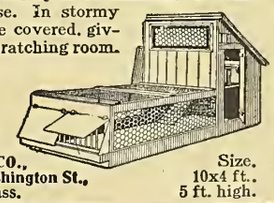
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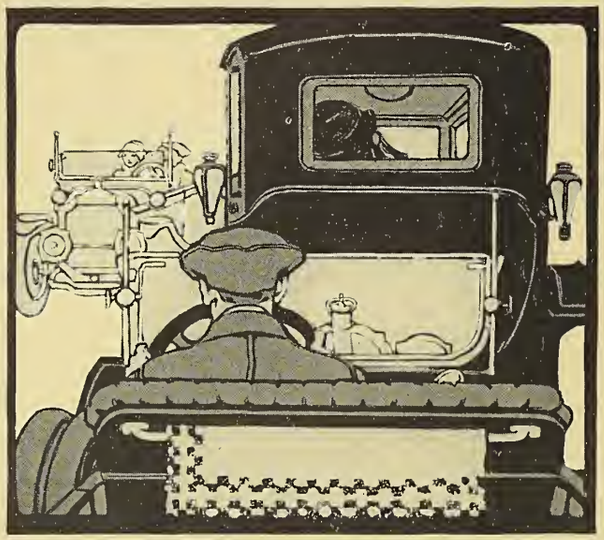
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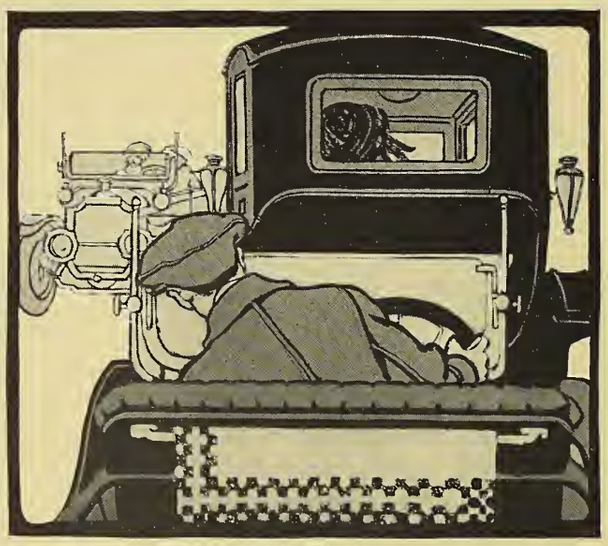


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Editor

WILLIAM A. VOLLMER
Managing Editor

VOLUME XXIII

NUMBER 4

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As the fitful warmth of April yields to the steadier sunshine of May the apple blossoms come out to dot the valley slopes with spots of pink-tinged white

Spring in the Garden

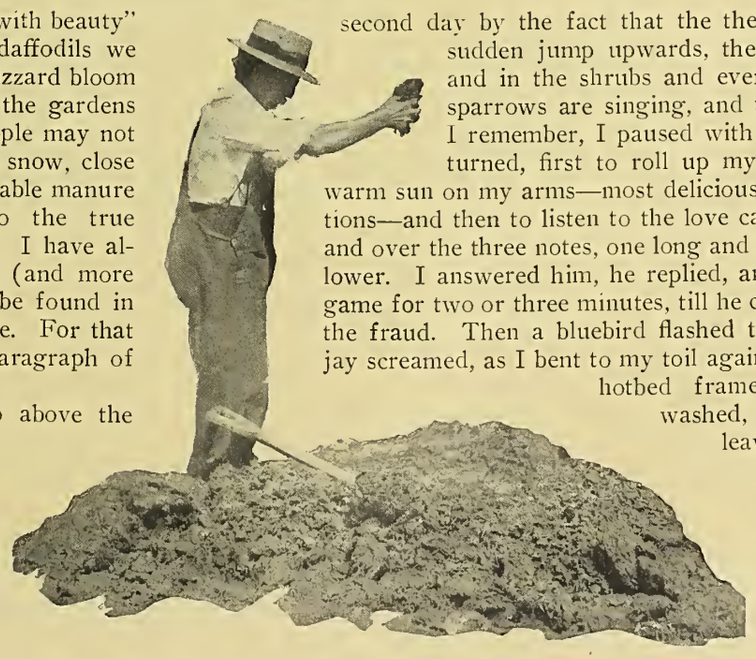
THE PROCESSION OF PLEASANT TASKS WHICH FOLLOWS THE WARM DAYS OF EARLY SPRING—APRIL ACTIVITIES AND THE REAL JOY WHICH COMES WITH THEM

BY WALTER PRICHARD EATON

Photographs by Ella M. Boult

NO daffodils "take the winds of March with beauty" in our Berkshire gardens. What daffodils we have in that month of alternate slush and blizzard bloom in pots, indoors. But one sign of spring the gardens hold no less plain to read, even if some people may not regard it as so poetic—over across the late snow, close to the hotbed frames, a great pile of fresh stable manure is steaming like a miniature volcano. To the true gardener, that sight is thrilling, nay, lyric! I have always found that the measure of a man's (and more especially a woman's) garden love was to be found in his (or her) attitude toward the manure pile. For that reason I put the manure pile in the first paragraph of my praise of gardens in the spring.

That yellowish-brown, steaming volcano above the slushy snow of March promises so much! I will not offend sensitive garden owners who hire others to do their dirty work, by singing the joy of turning it over with a fork, once, twice, perhaps three times, till it is "working" evenly all through. Yet there is such joy, accentuated on the second day by the fact that the thermometer has taken a sudden jump upwards, the snow is melting fast, and in the shrubs and evergreen hedge the song sparrows are singing, and the robins. Last year, I remember, I paused with the steaming pile half turned, first to roll up my sleeves and feel the warm sun on my arms—most delicious of early spring sensations—and then to listen to the love call of a chickadee, over and over the three notes, one long and two short a whole tone lower. I answered him, he replied, and we played our little game for two or three minutes, till he came close and detected the fraud. Then a bluebird flashed through the orchard, a jay screamed, as I bent to my toil again. Beside me were the hotbed frames, the glasses newly washed, the winter bedding of leaves removed, and behind them last year's contents rotted into rich loam. Another day or two, and they would be prepared for seeding—if I



only could bring myself to work hard enough until then!

How much hope goes into a hotbed in late March, or early April! How much warmth the friendly manure down under the soil sends up by night to germinate the seeds, though the weather go back to winter outside—as it invariably does in our mountains! Last year, for example, we had snow on the ninth of April, and again on the twenty-third and twenty-ninth, while the year before, on the ninth, six inches fell. In the lowland regions gardening is easier, perhaps, but yet there is a certain joy in this fickle spring weather of ours, the joy of going out in the morning across a white garden and sweeping the snow from the hotbed mats, lifting the moist, steaming glass, and catching from within, strong against your face, the pungent warmth and aroma of the heated soil and the delicate fragrance of young seedlings. How fast the seeds come—some of them! Others come so slowly that the amateur gardener is in despair, and angrily decides to try a new seed house next year. The vegetable frames are sown in rows—celery, tomatoes, cauliflowers, lettuce, radishes, peppers, coming up in tiny green ribbons, the radishes racing ahead. The flower frames, however, are sown in squares, each about a foot across, and each labeled and marked off with a thin strip of wood. These are the early plantings of the annuals, for we cannot sow out-of-doors till the first or even the second week in May in our climate. Sometimes, indeed, we do not dare to sow even in the frames till well into April. The asters are usually up first, racing the weeds. The little squares make, in a week or so, a green checkerboard, each promising its quota of color to the garden, and very soon the early cosmos, thinned to the strongest plants, has shot up like a miniature forest, towering over the lowlier seedlings, sometimes bumping its head against the glass before it can be transplanted to the open ground in May. But most prolific, most promising, and most bothersome, are the squares labeled "antirrhinum," coral red, salmon pink, white, dark maroon, and so on; tiny seeds scattered on the ground and sprinkled with a little sand, they come up by the hundred, and each seedling has to go into a pot before it goes into the ground.



In the sheltered lowlands where the ground has frozen deep the snow still lingers in worn, dirt-stained patches, though the first spring flowers are in bloom

There is work for an April day! I sit on a board by the hotbed, cross-legged like a Turk, while the sun is warm on my neck and I feel my arms tanning, and removing a mass of the seedlings on a flat mason's trowel, I lift each strong plant between thumb and finger, its long, delicate white root dangling like a needle, and pot it in a small paper pot. When two score pots are ready, I set them in a coldframe, sprinkle them, stretch the kink out of my back, listen to the wood thrush a moment (he came on the fourteenth and is evidently planning to nest in our pines), and then return to my job. Patience is required to pot four or five hundred snapdragons; but patience is required, after all, in most things that are rightly performed. I think as I work of the glory around my sundial in July, I arrange and rearrange the colors in my mind—and presently the job is done!

But the steaming manure pile is not the only sign of spring, nor the hotbeds the only things to be attended to. If they only were, how much easier gardening would be—and how much less exciting! There is always work to be done in the orchard, for instance, some pruning and scraping. I always go into the orchard on the first really warm, spring-like March day, with a common hoe, and scrape a little, not so much for the good of the trees as the good of my soul. There is a curious, faintly putrid smell to old or bruised apple wood, which is stirred by my scraping, and that smell sweeps over me a wave of memories, memories of childhood in a great, yellow house that stood back from the road almost in its orchard, and boasted a cupola with panes of colored glass which made the familiar landscape strange; memories of youth in that same house, too, dim memories "of sweet, forgotten, wistful things." My early spring afternoons in the orchard are very precious to me now, and when the weather permits I always try to burn the rubbish and dead prunings on Good Friday, the incense of the apple wood floating across the brown garden like a prayer, the precious ashes sinking down to enrich the soil.

The bees, too, are always a welcome sign of the returning season, hardly less than the birds, though the advent of the white-throated sparrow (who delayed till April twenty-first last year) is always a great event. He is first heard most often before breakfast, in an apple tree close to the sleeping porch, his flute-like triplets sweetly penetrating my dreams and bringing me gladly out of bed—something he alone can do, by the way, and not even he after the first morning! But the bees come long before. The earliest record I have is March thirty-first, but there must be dates before that which I have neglected to put down. Some house plant, a hyacinth possibly, is used as bait, and when the ground is thawing out beneath a warm spring sun we put the plant on the southern veranda and watch. Day after day nothing happens, then suddenly, some noon, it has scarcely been set on the ground when its blossoms stir, and it is murmurous with bees.



From the meadow comes the ceaseless, shrill chorus of the frogs, beating in waves upon the ear and making the air yet more warm and fragrant, the promise of spring more magical

Then we know that spring indeed has come, and we begin to rake the lawns, wherever the frost is out, wheeling great crate loads of leaves and rubbish upon the garden, and filling our neighbors' houses with pungent smoke!

There is a certain spot between the thumb and first finger which neither ax nor golf club nor saw handle seems to callous. The spring raking finds it out, and gleefully starts to raise a blister. My hands are perpetually those of a day laborer, yet I expect that blister every spring. Indeed, I am rather disappointed now if I don't get it, I feel as if I weren't doing my share of work. The work is worth the blister. I know of few sensations more delightful than that of seeing the lawn emerging green and clean beneath your rake, the damp mould baring itself under the shrubbery, the paths, freshly edged, nicely scarrowed with tooth marks; then of feeling the tug of the barrow handles in your shoulder sockets; and finally, as the sun is sending long shadows over the ground, of standing beside the rubbish pile with your rake as a poker and hearing the red flames crackle and roar through the heap, while great puffs of beautiful brown smoke go rolling away across the garden and the warmth is good to your tired body. Clearing up is such a delight, indeed, that I cannot now comprehend why I so intensely disliked to do it when I was half my present age. Perhaps it was because at that time clearing up was put to me in the light of a duty, not a pleasure!

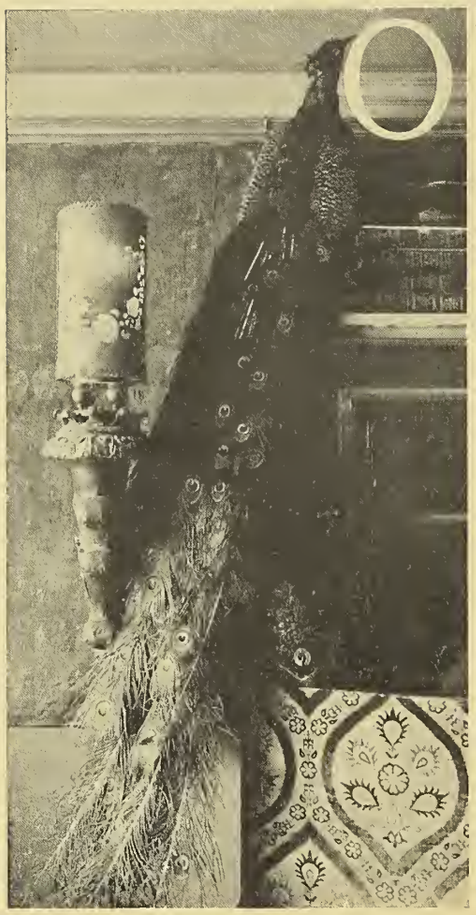
There is, alas, too often a tempering of sadness in the joy of taking the covers off the garden. One removes them, especially after an open winter like this season of 1912-1913, with much the same anxious excitement that one opens a long-delayed letter from a dear friend who has been in danger. What signs of life will the peonies show under their four inches of rotted manure, and the Japanese irises by the pool, and the beds of Darwins, so confidently relied upon to ring the sundial in late May and early June, before the succeeding annuals are ready? How will the hollyhocks, so stately in midsummer all down the garden wall, have withstood the alternate thaws and freezes which characterized our abominable January and February? Then there are those two long rows of foxgloves and Canterbury bells, across the rear of the vegetable garden, where they were set in the fall to make strong plants before being put in their permanent places—or rather their season's places, for these lovely flowers are perversely biennials, and at least seven times every spring I vow I will never bother with them again, and then make an even larger sowing when their stately stalks and sky blue bells are ablcom in summer! Tenderly you lift the pine boughs from them on a balmy April day (it was not until almost mid-April last year), when snow still lingers, perhaps, in dirty patches on the north side of the evergreens. Will they show frozen, flabby, withered leaves, or will their centers be bright with new promise? It is a moment to try the soul of the gardener, and no joy is quite like that of finding them all alive, nor any sorrow like that of finding them dead. At first I used to give up gardening forever when the perennials and biennials were winter killed, just as a beginner at golf gives up the game forever each time he makes a vile score. Then I began to compromise on a garden of annuals. Now I have learned philosophy—and also better methods of winter protection. Likewise, I have learned that a good many of the perennials which were stone dead when the covers were removed have a trick of coming to life under the kiss of May, and struggling up to some sort of bloom, even if heroically spindly like lean soldiers after a hard campaign. The hollyhocks, especially, have a way of seeding themselves undetected, and presenting you in spring with a whole unsuspected family of children, some of whom wander far from the parent stem and suddenly begin to shoot up in the most unexpected places. An exquisite yellow hollyhock last summer sprouted unnoted beneath our dining-room window, and we

(*Continued on page* 324)

The Vital Functions of Light in the Home

BY F. LAURENT GODINEZ

EDITOR'S NOTE:—*This is the fourth paper by Mr. Godinez in which he gives the results of experimental research in the matter of home lighting. Previous articles dealt with the subject of eye-strain, the avoidance of glare and types of satisfactory lighting. The present article explains ways of reproducing the suggestions previously given and offers practical hints to all persons who do not care to make radical changes in their lighting equipment.*



IN occasions when the landlord objects to temporary replacement or radical modification of lighting fixtures, it is usually possible to modify the unsatisfactory equipment by slight changes.

Take the case of pendant globes or shades, on typical fixtures, such as are represented in figure 1. Here the ordinary cut glass, plentifully besprinkled with stars, the spotty or commonplace prismatic shade, may be replaced by glassware which at least is not a constant distraction to the eye. This fixture, illustrated in figure 1, is a combination for gas and electric light. That is, the electric bulbs are in a pendant position and inverted incandescent gas mantles can be used. The function of shades and globes as secondary radiating surfaces in this relation is first of all to present a soothing and pleasing appearance to the eye. This necessitates opal glassware (available from all manufacturers) of such color as to modify the white, garish light. The light-radiating surfaces of the mantle, or filament, must never project below the rim of the shade, and the tip of the tungsten lamp and the mantle chimney should be frosted. When this is done, and the interior of the shade depolished, a most agreeable diffusion of light results, and, if the harsh, white quality is modified, the presence of such light sources in the visual field ceases to be annoying and dangerous. Of course, one's aesthetic ideals are somewhat restricted where glassware must be reconciled with the cheap, ugly fixtures found even in the most expensive apartments.

When the fixture is entirely lacking in proportion of line and symmetry, or else "embellished" with impossible ornate bows, festoons and flourishes, it is best to avoid adding insult to injury, by selecting globes expressing simplicity in contour and design.

Referring again to figure 1 the difference between the inverted gas and electric lamps is revealed by the characteristic—and incidentally unattractive burner mechanism of the gas lamp. Many persons are unaware of the fact that standard manufacturers of gas mantles have perfected a burner mechanism which exactly resembles the ordinary electric socket. This device enables one to use all the globes available for electric lamps—in either upright or pendant forms, with the standard three and one-half inch upright mantle, or the new Junior mantles, which compare in quality of light with the sixty Watt tungsten lamp.

There seems to be a general impression that when a portable gas or electric table lamp is used as a supplementary source, as described in our last article, it is necessary to eliminate one of the fixture lights to accommodate the flexible gas tube, or electric conductor. "Multiple" attachment plug sockets may be obtained for a few cents, which permit the necessary connection without detracting from the appearance of the fixture, and gas cocks with "by passes" perform the same function for gas lamps.

When fixtures are fitted with upright lamps, as in figure 2, modification is somewhat facilitated, that is, assuming the function of the center ceiling fixture to be a source of general illumination, in contrast to the localized effect of the table portable lamp, which as previously stated contributes to the pictorial aspect of an interior and supplies variety.

The fixture illustrated in figure 2, is typical of thousands. They are usually hung so low that the glare from these cheap, ground glass or ribbed shades blinds the eye, or so high that the useful, horizontal candle power of the illuminants is wasted on the upper side walls, causing annoying glare from picture glass, and leaving the lower portion of the room where light is needed, in a stratum of darkness.

Figure 3 indicates how such a fixture with upright lamps, may be converted into an indirect lighting unit. The reflectors furnished for this purpose by the manufacturers of indirect lighting equipment, are termed "adaptables" and are designed to slip over the electric socket without any re-construction, and while the reflectors illustrated in figure 3 are not artistic, they are serviceable to those who, as tenants, must obtain lighting improvement without removing or injuring the landlord's equipment.

Great attention has been attracted by what is known as the indirect method of illumination. This system advocates the entire concealment of source, the lamps being placed in glass reflectors coated with pure silver, which reflect all of the light on the ceiling, which in turn acting as a third redirecting surface, diffuses the light throughout the room. This method has found many partisans amongst ophthalmologists and oculists.

Dr. George M. Gould, Editor of "American Medicine," and author of many authoritative monographs on physiological problems, says in a

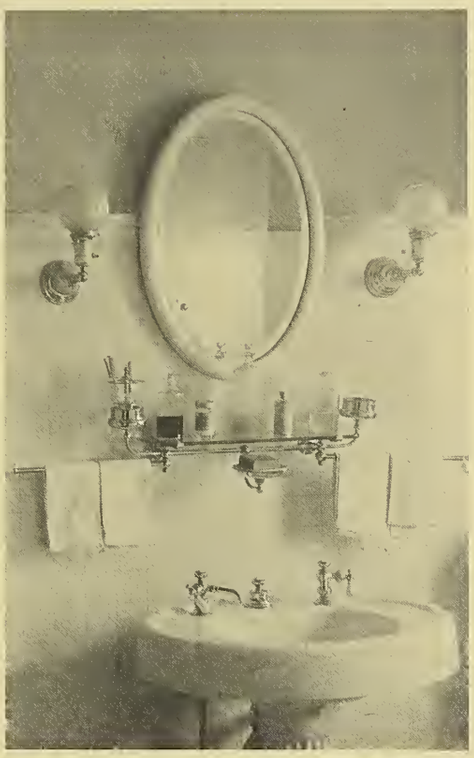


A dense opal hemisphere with light ceiling above gives a good indirect effect

chapter on the Physiology of Vision: "The millions of dollars spent each year in illumination are in great part wasted and misspent, and by the methods used all the harm is done to the eye that is possible. No room should be lit in such a manner that the individual lights are visible. Illumination should be by transmitted, dissipated and reflected light."

Light colors reflect the most light, because they absorb less, and diffuse more than others, but it is a mistake to use a dead white ceiling as a diffusing medium, since in effect such lighting suggests a mortuary.

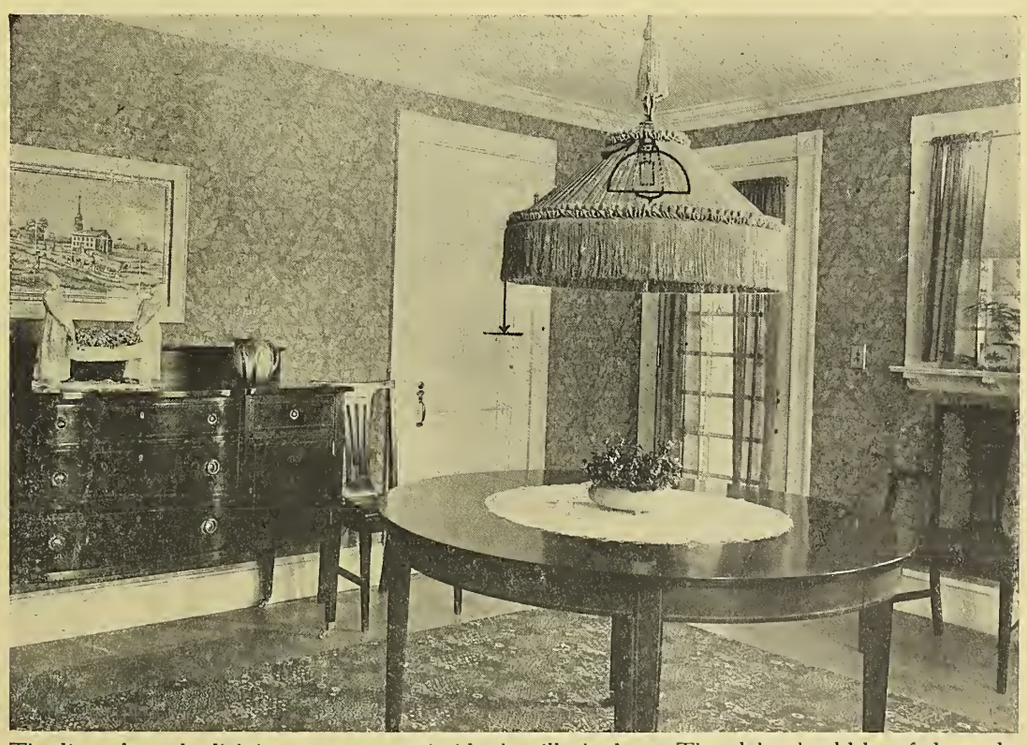
Here also, as in the case of direct lighting, color modification is necessary, and contributes immeasurably in suggesting an atmosphere of repose. Delicate cream and ivory ceiling tints are suitable. The important thing is to employ reflectors which re-direct every ray of light from the source to the ceiling. Pure silver, highly polished, reflects ninety-two per cent. of the incident light. The best reflectors for indirect lighting consist of fine glass, upon which pure metallic silver has been deposited. A series of spatulated, contiguous indentations on the inner surface, prevents the reflection of a multiplicity of lamp-filament images, or streaks on the ceiling. The permanency of this reflecting surface, depends only on its cleanliness. It is not chemically affected or disintegrated by light or heat rays from electric illuminants. On the contrary, ordinary mirror reflectors, glass upon the back of which quicksilver or some solution of nitrate of silver and chloral hydrate has been deposited become yellow and worthless as reflecting surfaces with comparatively short use.



A situation where white light is desirable, but it should be placed to shine on the face, not the mirror

Much may be said in favor of indirect lighting. Owing to the entire concealment of lamps and reflectors within, it is possible to express character and individuality by an unlimited variety of exterior fixture designs. Hence, we may hide these ugly but efficient reflectors within floral baskets, massive urns, pedestals, or cornices, without even utilizing the tediously conventional ceiling outlet. There are now available portable lamps for table, or pedestal use, which combine both indirect and direct effects. Within an attractive silk shade a powerful reflector gives a soft general illumination throughout the entire room, or by a turn of the switch, the brightness fades and a soft twilight prevails. The versatility of such a lighting unit, with its portability, permits of both direct and localized, and indirect and general lighting, independent of regular fixtures or equipment.

The glass maker has produced in opal glass many attractive urns and bowls, which lend themselves gratefully to indirect lighting applications. In using these translucent forms, it is best to utilize inner reflectors, if any benefit is to be derived from ceiling diffusion, since the mere grouping of bare lamps, within one glass bowl is, at best, a miserable compromise betwixt direct and indirect lighting. This is because the inner surface of the glassware generally used, has a negligible reflecting or diffusing action, and in practically all instances the light sources are stupidly placed so that their effective distribution, cannot be efficiently utilized in producing the desired effect. Again, Italian alabaster, for example, if too brightly lighted from within, loses to a marked degree the charm of its delicate veinings and exquisite depth, owing to its excessive surface luminosity from transmitted light. Only surface ornamentation rendered in decided *bas relief,* is effective under such conditions. It is best, therefore, to allow just sufficient



The lines show the lighting arrangement inside the silk shade. The globe should be of dense depolished opal; the shade lowered as indicated. The upper arrow shows position of a small dimming device

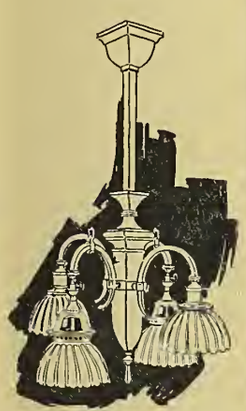


Fig. 1. — Suggestive of the office or the store



Fig. 2. — Useless, but seen by thousands

transmitted light within the bowl to accentuate such elements of beauty as are inherently within the structure of the glass itself. This may be accomplished by utilizing the reflectors previously described, with secondary illuminants of low intensity, placed to diffuse, illuminate and express the character of the glassware.

It is to be regretted that electric illuminants may not be so conveniently regulated as gas. The satisfaction of turning a lamp up, or down, gradually, in perfect harmony with one's various wishes, is very great. True, there is an electrical attachment on the market which accomplishes this in a way, but the various gradations are too abruptly marked, and its application is limited. To those who appreciate the ability to control electric light in the home, with the same facility as gas, the use of "dimmers" such as are used in producing theatrical effects, are recommended. These are obtainable in various sizes, and may be placed on the wall near the point of control or switch. Very often they may be concealed at the side of a piano or behind a large picture frame. They consist of a resistance wire imbedded in fire-proof material and contact with the wall is prevented by projecting arms, which serve to hold them in place. Any intelligent electrician will know how to install them in accordance with the regulations of the Board of Fire Underwriters.

In decorative touches of light, the small electric lamps offer a ready means of attaining many pleasing effects. Perhaps the best way is to use what is known as a transformer, which cuts down the regular commercial voltage supplied at one hundred and ten volts to six or eight volts. This voltage involves no fire risk, consequently small silk-covered wires of the same color as the wall paper can be readily concealed and distributed without difficulty or expense. When the main switch is open, no electricity can pass through the transformer, and the lighting of the small lamps, of course, denotes that the switch is closed—hence they constitute their own danger signal. In concealing these small bulbs within vases, to give life to a sprig of blossoms therein, small reflectors of white asbestos, funnel-shaped, may be easily made.

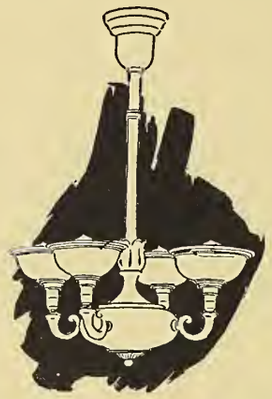
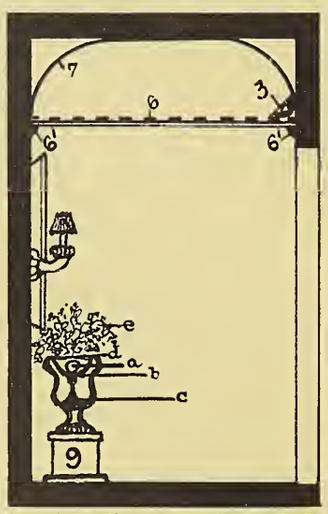


Fig. 3.—A possible indirect lighting unit

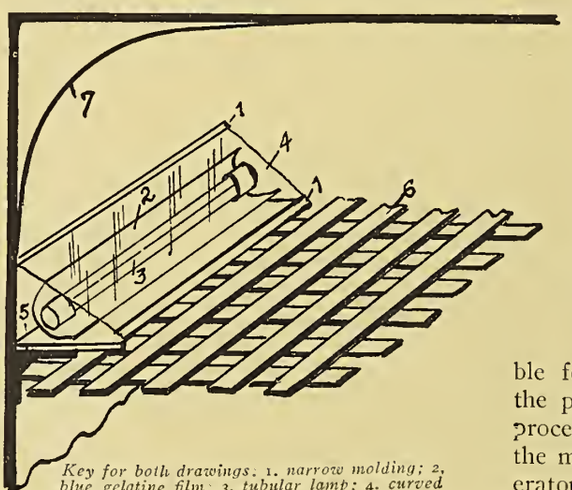
Be sure that the light radiating portion of the lamp lies well within the reflector, else its redirecting powers will be nil. A touch of light on the dial of an old clock, the beautifying of a picture, as described in previous articles—the glow of an open hearth, and other and innumerable touches of light—used as an artist would apply his brush to a painting—are only limited by the imagination and artistic perception of the individual, which is measured, incidentally, by the finished appearance of his work.



The glass bowl with a cluster of lights inside shows a faulty attempt at indirect lighting. A powerful reflector should be placed in the bowl throwing *all* the light on the ceiling. Small auxiliary lights beneath this would bring out the beauty of the glassware



A sectional diagram showing method of lighting a hallway for the moonlight effect spoken of in the last paper.



Key for both drawings. 1. narrow molding; 2. blue gelatine film; 3. tubular lamp; 4. curved reflector; 5. supporting moldings; 6. lattice; 7. artificial ceiling, deep blue; 8. supporting moldings; 9. urn and pedestal, with light to shine on flowers (e); a. *lamp;* b. *reflector;* c. *support.*

And now, a word as to those who are not users of either public service supplied gas or electric light—and their name is legion, covering the independent systems which may be employed.

It need not be understood from what has been said in the foregoing articles that these methods of using light are only available in regions where gas or electricity are supplied by some public service corporation. The home in the distant rural district or the far away cottage at seashore or mountain may receive all the benefits of good lighting, for while there may not be the city supply, there may be substituted the independent system, installed and operated by the owner. It must not be thought that the private lighting plant is a heavy expense or a great annoyance to look after, or that it is responsible for fires, for so far has the progress of manufacture proceeded that there are upon the market a number of generators safe, moderate priced and practically automatic.

(*Continued on page* 342)

The Various Uses of Shrubs and Shrubbery

THE DISTINCTIVE QUALITIES OF SHRUBS—THEIR SPECIAL AND GENERAL APPLICATION—PLANS THAT WILL ENABLE YOU TO IMPROVE YOUR PLACE—DIRECTIONS FOR CHOICE PLANTING AND CARE

BY E. O. CALVENE

Photographs by Ella M. Boult, E. J. Wallis and Nathan R. Graves



Philadelphus coronarius

SHRUBBERY in general has many—or at least several—distinct uses. That, I think, is pretty well understood and appreciated by most of us; but it takes a considerable degree of intimacy with the many kinds of shrubs that are available to bring a realization of their distinctly individual qualities and their special attributes. Collectively they are something like a roomful of people newly introduced—but gradually they step out one by one, as acquaintance ripens, and become significant units displaying each the charm and variation of its kind. Thus we come to understand that there are general utility shrubs and others which Nature has evolved into "distinguished personalities," and we learn to use them accordingly.

A good all-around shrub must be robust in habit, clean and wholesome in leaf and branch and the host of no insect, adapted to any ordinary soil, attractive if not showy in flower—and absolutely and unquestionably hardy. There are many which fulfil all these requirements; but when it comes to grouping shrubs into masses, other considerations enter in; and so only certain combinations from the list can be used effectively together. There must be variation in height, so that the mass may rise with an easy flowing line; there must be variation in time of bloom, so that there may be flowers somewhere in the mass over the longest possible period; and there must be variation in habit—that is, the form which the shrub takes in growing—so that the erect-growing kinds shall have lower, undulating mass before them to unite them with the lawn effectively, leaving no dividing line.

As a first-choice list of "all-around" shrubs, I would name these: *Syringa vulgaris,* 15 feet; *Viburnum opulus,* 12 feet; *Cornus paniculata,* 10 feet; *Philadelphus coronarius,* 10 feet; *Spiraea Van Houttei,* 8 feet; *Rhodotypos kerrioides,* 6 feet; *Diervilla florida,* hybd., 6 feet; *Daphne Mezereum,* 4 feet. These eight may be reduced to five by eliminating the Syringa, the Cornus and the Daphne. The latter can be spared, for the six-foot-tall *Diervilla* is so arching as to branch and spreading in its habit that it makes a most excellent foreground shrub in spite of its size. With these five species a limitless planting is quite possible without monotony; and here is material for boundaries, screens and border groups of every size and shape.

In arranging these upon the ground, the tallest will naturally be placed farthest back; yet it is not good planting invariably to bring the mass down to the ground level by facing it down with low-growing specimens. For variety and a spirited effect, there should be places where certain tall shrubs rise abruptly; but these should be varieties which do not grow bare at their base as they mature. And, of course, the mass should not be reduced to a single row at any point; but always there must be enough to insure its density and to prevent the straggling appearance which



Viburnum Opulus is a shrub glorious in its fine leaf, flower and berries. It is adaptable to various uses



The lilac is a large shrub especially desirable for the delightful fragrance of its blossoms suggestive of old-fashioned gardens



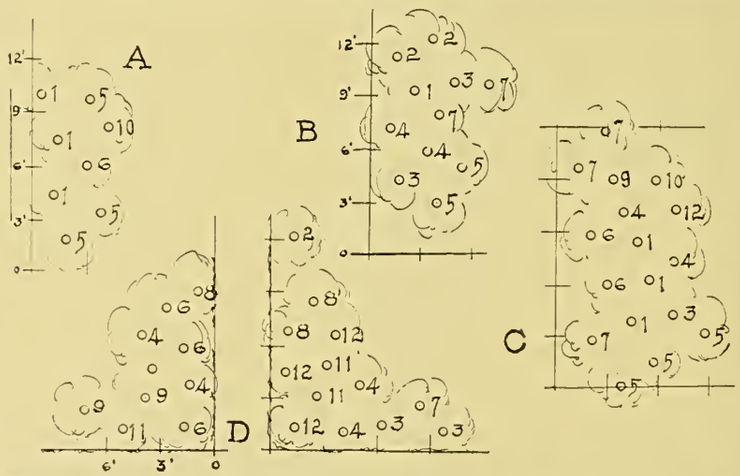
The yellow blossoms of the forsythia precede almost all other spring bloom. However, place the shrub in the center of others

comes when the shrubs are not planted quite thickly enough.

These general utility shrubs are adapted to large places and small; and the little diagrams here given show units from which a planting scheme of almost any size may be built up, by repeating them as suggested. Naturally a large planting need not be limited to so few varieties as seven; so a "second choice" list is given to be combined with the first, thereby increasing the flower effect of the mass. Do not overlook the beauty of shrubbery foliage, however, in the desire to have plenty of flowers; for the green of shrubs *en masse* may be quite as much a feature of the garden or of the landscape as the green of trees. And autumn brings color quite as much to the shrubbery group as it does to the trees, when eyes are open to see.

The shrubs which are recommended in these two lists are not novelties by any means; indeed, a novelty in the shrubbery world is usually the thing to be avoided. The first named is just our old, well-known and well-loved purple lilac; the second—*Viburnum Opulus*—is the native highbush cranberry—a shrub which has not a peer in the world, to my mind. Everything about it is lovely, from its lobed leaves, suggestive of the maple a little bit, to its large cymes of white blossoms and the subsequent abundance of scarlet berries. Usually this is counted a shrub of special purpose, just for these berries. But I prefer to make use of it everywhere, as a general utility variety, and not limit it to winter effects. It is too valuable to be so limited.

The second is another native, a cornel—*Cornus paniculata*—which is almost if not quite as fine a specimen as the *viburnum*. The two species have much in common to the casual observer, but may always be known one from the other by the division of the flowers into four parts in the cornel, into five parts in the viburnum. The leaves of the former are always smooth at their outer



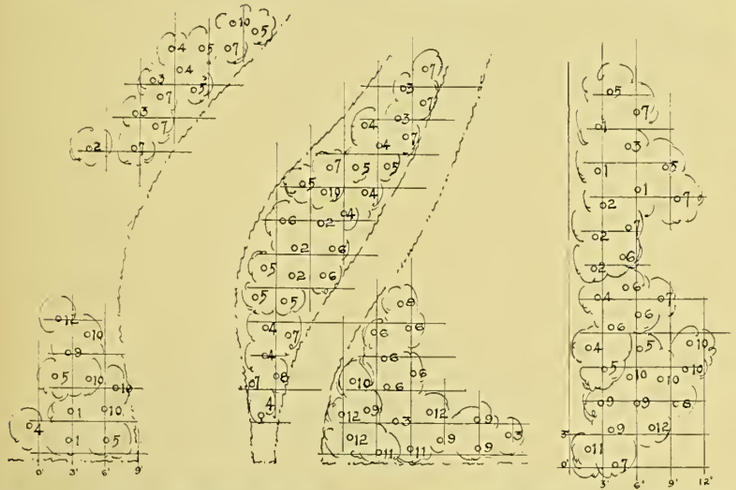
These measured plans may be adopted as units or combined. A and B are border plantings; C, a screen to be seen from both sides, and D a small entrance planting



Shrubs should frame a lawn, not be scattered about it or have formal lines. This border shows a shrubbery grouping in which *Spiraea Van Houttei* predominates. This plant with its arching branches smothered in fleecy white lasts well and is very showy

edges too, while the leaves of the viburnum are saw-toothed. This particular cornel has gray, satiny branches and is very attractive in flower; its fruits are white instead of scarlet, but they are borne on scarlet stems, which set them off beautifully.

The old-fashioned sweet—heavenly sweet!—syringa is number three (*Philadelphus coronarius*), and it is for its fragrance especially that this is included, although it is an attractive, fresh green and is free from bugs and blights. No fruits follow its waxy blossoms; but it takes its place midway between the background and the foreground as a very fresh and refreshing specimen nevertheless. The spiraea that is next named is growing so familiar to everyone that its description is hardly needed here. No shrub in the whole garden list is more showy than this when it is in blossom, and it lasts well, too. Literally a bank smothered in fleecy white, its arching branches make it suitable for the foremost position in the group, when one chooses to place it thus, for



The first two sections are an entrance driveway and a walk; at the at the right is a border in three sections. For key to plans see page 314



The common deutzias present an abundance of bloom. *Gracilis rosea* has pinkish flowers, while the white form is *Lemoinei*

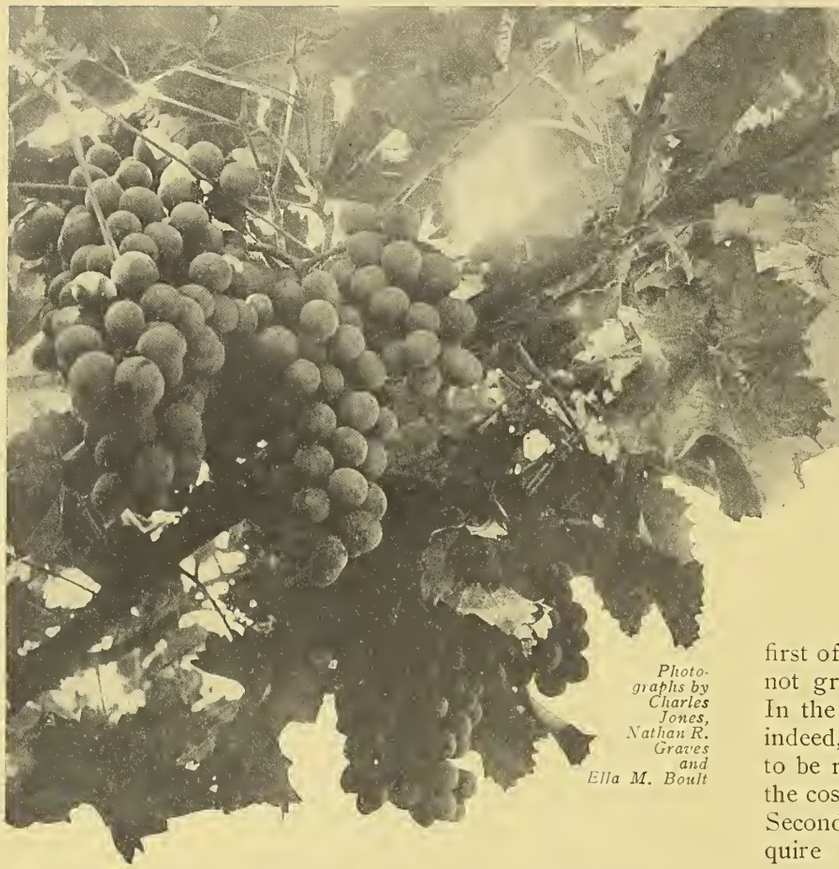
it almost sweeps the ground with its tips, whatever its height may be. The foliage is fine and delicate, and the whole habit of the bush is dainty in the extreme, notwithstanding its really considerable size. For a short time after the blossoms have fallen, it goes through a period of untidy frowsiness owing to the persistence of the dead flower stems; but this is, after all, practically but a few days—less if there comes a good rain to beat them off—and its airy grace throughout the rest of the year more than compensates for these, even supposing its flowers did not.

Rhodotypos kerrioides is not so well known as it ought to be. It has great white, starry, solitary blossoms borne at the ends of the branches curiously so that they look straight out from the bush at one. Following these there are black fruits that are ornamental and persistent; but like the highbush cranberry, I feel

(*Continued on page* 310)



The desirable shrubbery grouping should have variety in height—the mass should rise in easy, flowing line and there should be variety in form. The mass should never edge a lawn in a single line. This shrubbery is selected for a variety of foliage color and appearance rather than blossom



Photographs by Charles Jones, Nathan R. Graves and Ella M. Boult

Why You Should Grow Small Fruits

DELICIOUS STRAWBERRIES, CANE FRUITS AND GRAPES ARE EASILY HAD —HOW TO PLANT AND GROW THEM

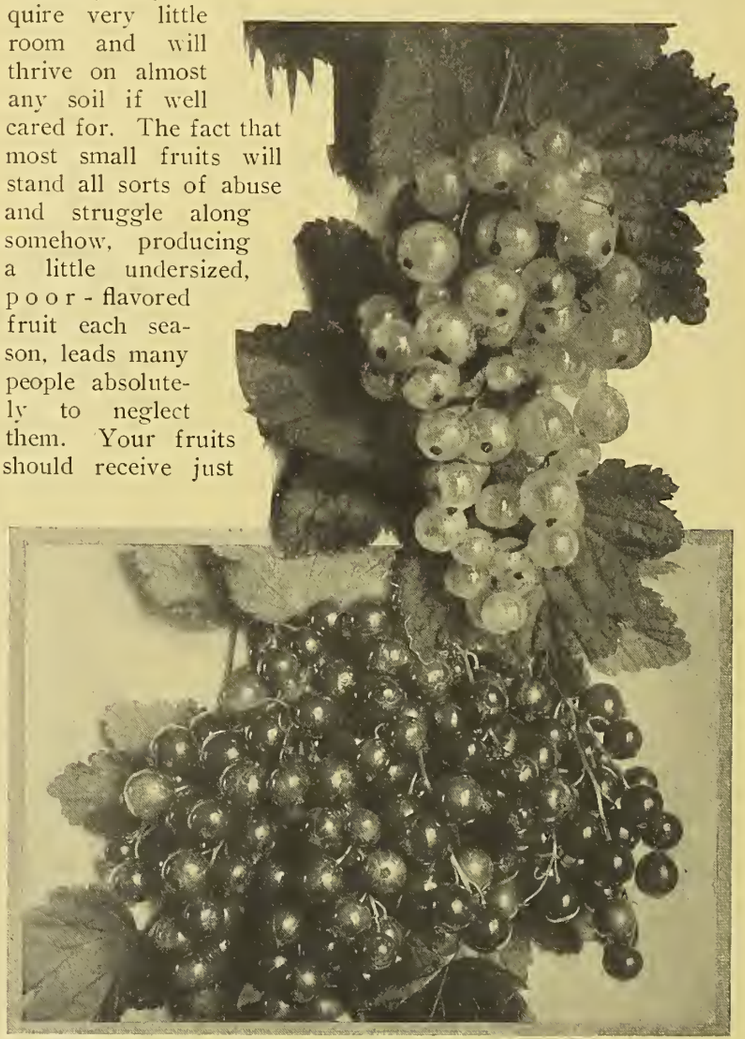
BY D. R. EDSON

I FIND in making my rounds of friends who are addicted to gardening, that the raising of fruits becomes one of the most virulent forms of this gentle vice. Those who have passed seemingly little injured or affected through the various stages of vegetable gardening, and have even proved themselves immune to such contagious epidemics as the poultry germ, very frequently succumb when they are exposed to the small fruit hobby.

After all, this is hardly to be wondered at—the fruits are the aristocracy of the garden, and protest our democracy as we may, who would not enthuse more over having produced a dishful of luscious, crimson, pungent, odorous strawberries or a bunch of sun-ripened purple grapes, bulging with juicy sweetness, than over the biggest cabbage or the most odoriferous onion that ever grew. Another great thing about berries and fruit is that those which one grows in his own garden always are the best. But I know a man who will leave perfectly good watermelons in his own patch—to go a mile out in the country and pillage the field of an old farmer, claiming that he can never grow such melons as those. While Jones will go two miles, to get one of this old farmer's melons, however, he will take me out into his own yard and make me feel that I have no right to retain my life insurance policy by eating a half ripe bunch of grapes or a green pear, simply so that he can explain to me how this old farmer who also grows pears and grapes doesn't know the first thing about the art.

That is the fact of the matter, and for several reasons. First of all to develop their full flavor they should be ripened just where they grow, up to the last minute. Further, berries and small fruits are about the least suitable things for shipping of anything that grows. They become bruised and squashy, so that you have your choice of getting them under-ripe or semi-marmaladed if you depend upon the market for your supplies. Furthermore, the man who grows for market is looking after a big yield and to shipping quality, while if you grow your own you can devote yourself to the really important point-quality.

There are two things of importance that must be taken up before giving definite directions as to just what to do now. The first of these is that there is absolutely no reason why you should not grow your own fruits and every reason why you should. In the first place the outlay for a stock of plants is very small indeed, especially considering the fact that they will not have to be replaced for a great many years. Just to show how little the cost is, I have made out a sample order as you will see below. Secondly they require very little room and will thrive on almost any soil if well cared for. The fact that most small fruits will stand all sorts of abuse and struggle along somehow, producing a little undersized, poor-flavored fruit each season, leads many people absolutely to neglect them. Your fruits should receive just



You can hardly kill a currant bush firmly established, and beautiful white or black currants like these are won with little effort

as careful attention as anything else in the garden. They will not require as much as most other things, and in proportion to the work and time spent on them will give you probably more satisfactory returns than any other of the annuals which, as a matter of course, you grow every year. And there is no danger of your having too much. Modern berries of all sorts have been developed to a point where their yield is quite marvelous. Nevertheless, any surplus there may be is to be most readily disposed of. Kind friends will assist you in your hour of need.



Gooseberries, like currants, need an open, airy position for their best development

The best time for setting out most of the small fruits is early in the spring, as early as the ground can be worked up to a nice condition for planting, so as soon as you finish reading this article you should look over your catalogue carefully and order what you will require. The one thing that keeps berries and small fruits out of every home garden is the fact that you have to wait one season before you begin to be rewarded for your forethought and energy in setting the plants out. If there is one thing above all others that the amateur gardener detests it is having to wait. He would rather dig up and devour a puny little radish at the end of four weeks than wait four months for the most delicious musk melon that ever mellowed on the vine in the autumn sun. And when you try to get him to set out a strawberry patch or grape vine or a few raspberry bushes, from which he will be able to gather nothing until the following season, you have a hard job on your hands in spite of the fact that these things will last for years and give him an abundance of the most delicious and prized morsels that are to be had from the garden. Even this objection has been partly overcome by our plant breeders. The new, fall-bearing strawberries—such as Pan American and Autumn, will bear a fair crop of berries in the fall from plants set in the spring—the latter have the better berries but you must keep the runners pinched off, an easy task, to get good results the first season, only three or four months after planting! And raspberries, too, if you wish.

At the end of this article you will find a sample order for small fruits, and if you do not find in your catalogue all the varieties mentioned there, select others or send in the order as it is and ask your seedsman to substitute other good varieties which he may be able to recommend for any of those which he does not carry in stock.

Though the most difficult and the most important part of your work is done when you get your order mailed, nevertheless, there are a few other little details to be attended to and one of these, which you should attend to at once and not wait until you receive a notice from the seedsman that your plants have been shipped, is to prepare the place where you are going to plant them. Remember that they will occupy the same place for years and therefore you should pick out a spot where they will be least likely to be in the way and least likely to be disturbed or injured by the man who plows the garden or the auto truck that delivers your coal. It will be, by far, the best scheme to have the whole plot which they are to occupy plowed up and thoroughly harrowed or dug or spaded or forked. And, of course, where you are going to put the strawberry bed the ground must be prepared in this way. Grape vines, currants and gooseberries even the cane fruits—raspberries and blackberries—may be dug in individual spots, but in this case, a generous sized hole should be prepared, for eighteen inches or more in depth, thoroughly pulverising it and enriching it with a little old manure or a few handfuls of bone meal. A good plan is to make a border a few feet wide along the fence or hedge or walk—which usually is not utilized for any specific purpose, and use this for small fruits, keeping the entire surface of it well cultivated at all times. While your fruits will do well on any fair garden soil, one word of warning may be necessary—none of them will do well where the under drainage is poor. Wet feet and good fruit are never to be found on the same vine, bush or tree.

When the impatiently awaited package does finally arrive from the seedsman, set the plants out at once. If it is rainy weather so much the better. In planting, you should be especially careful of two things. First, not to let the roots of the plants become dried out by the wind or sun, and second, to put them into the ground so firmly that they will think they have been growing there six months. If you can't do this with your fingers and knuckles, don't hesitate to use your feet. After they are planted you can rake or fork over the surface of the soil for an inch or two and leave it





Red, black and white raspberries are easily grown, and moderate care will produce giants like these, of the most delicious flavor

fine and loose, but around the roots it should be packed as firmly as possible.

Without doubt strawberries are the most popular of the small fruits. Have the bed prepared so fine that you can set the plants easily by hand. If the roots are long and dried off at the ends, cut them back about a third. In any case, spread them out as much as possible and set them as deep as possible without getting any dirt over the crown. Where only a few plants are used, a hundred or so can usually be had by growing them in what is known as the L system culture—a single row, or a bed of three or four rows, with the plants set a foot apart each way and all runners kept cut off as soon as they appear so that the strength of the plant will be thrown into one crown. If it is very hot and bright, it will pay well to keep them shaded for two or three days with pieces of old newspapers or something similar.



When raised with care, cane fruits have a decorative value that should not be disregarded

As soon as the newly-cut plants "take hold," the ground should be worked about them quite deeply, three or four inches at first. This should be gradually reduced, however, until just the surface is stirred up enough to maintain a sufficient "drought mulch" as it is called, to save the moisture below in the soil about the roots. It will be very easy to keep the newly-set plants clean if cultivation is given frequently, every ten days or two weeks. Do not let the weeds get a start or your season's work on the strawberry patch will be doubled.



In taking up runner plants of strawberries care should be exercised and a ball of soil left adhering to the roots. In purchasing look for well-developed root fibres

Two or three crops are usually taken before a new bed is needed. You do not have to buy new plants for this, however, as you will have plenty of your own. They may be rooted directly in the soil, but a much better method will be to secure a quantity of small pots, 2 or 2½ inches, and place these in the soil, filling them level full and in such a position that the runners about to root can be held in place over them with a clothespin or a small stone, so that the new roots which form will be confined in the pot. It is usually made after the fruiting season, so that the newly-made bed may be set out in August or September. A far better method, however, is to select a few plants from which to get your rooted runners earlier in the season, so that you will have them ready to set out in July or early August. If these are set in rich soil and well cultivated and all the runners picked off clean, they will give a full crop of berries the following spring, thus saving a whole year's time. For with this method you can easily have a new bed every year, and if you want the largest and nicest strawberries you can grow, this is the way to handle them.

The mulching for the strawberry bed serves a double purpose. It protects the plants during the winter, keeps them up out of the soil, and guards them from being spattered every time it rains in the fruiting season. Clean, dry, autumn leaves, straw or bog hay may be used for this purpose, but the latter is the most convenient, as straw is more expensive and leaves are likely to blow around. Put it on after the ground freezes hard, but before very severe cold weather—November Fifteenth to December Fifteenth, depending upon the season. Cover the entire bed, soil, plants and all about three inches deep. In the spring when they have once begun to throw out new leaves and danger of frost is over, push this covering a little to one side over each plant to assist it in getting out of bed.



The red Logan's dewberry of wild blackberry flavor is sometimes one-and-one-quarter inches long

The cane fruits—raspberries, blackberries and more humble and not sufficiently appreciated cousins, the dewberries, will grow with scarcely any care at all; but the better the attention you give them, the better will be the returns they give you. If there is any choice at all in the matter of soil, give them the heaviest and most clayey in the garden. Set the plants in the ground at about the same depth they have been growing in the nursery which you will be able to perceive by the discoloration at the base of the stem. The canes when you receive them will be quite long, but as soon as they are planted they should be cut back within about half a foot of the ground.

As the plants grow naturally, they are altogether too ambitious, growing up entirely too many canes, but they should be cut out until only four or five are left—and each year all those which have borne fruit should be cut out clean and removed as soon as possible thereafter.

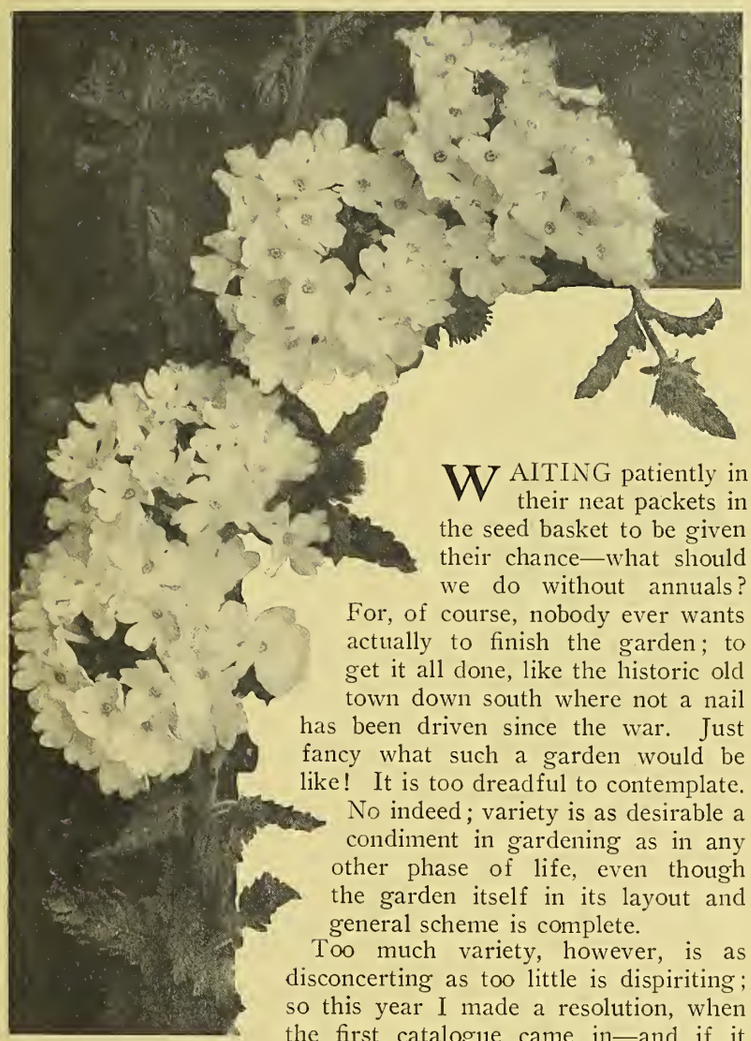
(*Continued on page* 317)

Ten Annuals for This Year's Garden

AN ATTRACTIVE PLAN FOR A GARDEN USING ONLY TEN VARIETIES—THE PLANTING AND CARE THAT MAKES FOR THE BEST RESULTS

BY GRACE TABOR

Photographs by Nathan R. Graves and Charles Jones



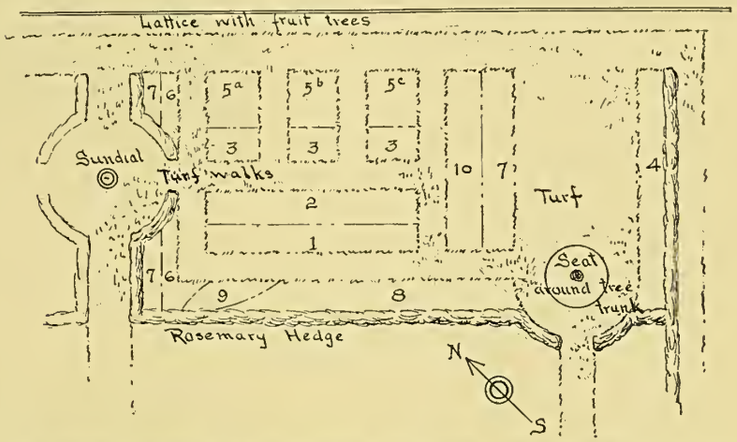
Verbena

WAITING patiently in their neat packets in the seed basket to be given their chance—what should we do without annuals? For, of course, nobody ever wants actually to finish the garden; to get it all done, like the historic old town down south where not a nail has been driven since the war. Just fancy what such a garden would be like! It is too dreadful to contemplate. No indeed; variety is as desirable a condiment in gardening as in any other phase of life, even though the garden itself in its layout and general scheme is complete.

Too much variety, however, is as disconcerting as too little is dispiriting; so this year I made a resolution, when the first catalogue came in—and if it works out satisfactorily, it is going to be written down in the Book of Garden Laws. Here it is: The garden shall have ten annuals, and only ten—as unlike each other as possible, and perhaps every one shall be different from any that the garden has ever entertained before. Certainly some of them shall; and one at least must be a new variety—or as new as the season offers.

This is really a broad, elastic resolution—one that does not hamper in the least and that provides pleasurable anticipation. Here is what I am using: For the season's novelty, which has been given space enough to try it well, there is the new Shirley poppy, "Celeste"—a lovely, pallid ghost, in gray, sky-blue and lavender tones. That I am a bit sceptical of this flower only makes the anticipation the more keen. In combination with gray nothing is as lovely as the purest, palest yellow; so, on the chance that the poppies may show this promised tone, they are backed with a row of the pure yellow snapdragon, Golden Queen. It will not be a bad combination even if the gray should turn out to be only lavender.

For the rest, there is the African daisy—*Arctotis grandis*—with its great, white, starry flowers, tinted with pale bluish mauve on their backs; the pretty Clarkia in a salmon pink form for a partly shady place; quantities of double pinks in three varieties—a pure white, a crimson and an almost black crimson that shows a white line around the edges, like rich velvet edged with ermine; California poppies in yellow shades only, ranged in front of a line of double stock-flowered annual larkspur; red and white lupines in another place that does not get the full sun; Xeranthemums in a group at one corner, and finally, a mass of verbena, a white and clear blue variety, making up the required number of ten. Enclosing the entire space where



1, *Papaver* Celeste; 2, *Antirrhinum*, giant yellow, snapdragon; 3, *Arctotis grandis*, African daisy; 4, *Clarkia*, Salmon queen; 5, *Dianthus* (annual), Snowball, Fireball and Morning Cloak; 6, *Eschsholzia Californica*, California poppy; 7, *Delphinium* (annual), Sky Blue; 8, *Lupinus* (annual), rose and white; 9, *Xeranthemum annuum*, everlasting, and 10, *Verbena*, blue and white

the annuals grow there is always a trim little hedge of rosemary, sweet-flavored and useful—a paradise for the bees. This, of course, is in its accustomed place. All walks are turf and the beds are cut down about two inches below the surface.

Of course, nothing is to be expected of the garden of annuals much before the end of June; therefore it should not be located where its barren earth will be aggressively within sight during the preceding weeks. The edging of rosemary helps to minimize the barrenness, however, and in localities where this will endure, I know of no more delightful treatment for garden beds than such a hedge, whether the walks are of grass or gravel. Common mint may be used in place of rosemary, where it is not hardy, and this furnishes a pleasant and effective substitute, if trimmed well and kept within bounds.



California poppies demand nearly the care of oriental sorts and are averse to transplanting. The seeds may be sown early. Golden West is a good variety for the garden

Annuals happily will grow practically



Snapdragon, though not really an annual, is treated as such. One of the best yellows is Golden Queen



The annual larkspur is a very beautiful substitute for the perennial sort, and its blue blossoms appear in July if seeds are sown late in April

anywhere and for almost anybody, however indifferent a gardener he may be. But even annuals appreciate a good home, and will respond to good culture. Therefore it is wiser to give them a little more consideration than they commonly receive—to make their beds with care, and tend them according to their needs, until the plants are big enough to look out for themselves, without further trouble on your part.

Each year the earth must be spaded thoroughly and worked over to a depth of eight inches or more. This insures a mellow soil for deep-reaching roots, and though it seems unnecessary, perhaps, after several seasons of culture, I always feel that it is better to make no exceptions to this rule. Wet or stiff soil will need deeper work than this, especially if it is newly broken up, but a foot is deep enough for all summer flowering annuals. Vegetables and sturdier things may need greater depth, but we are concerning ourselves only with the plants which will not. Well rotted and broken up stable manure should be worked in with this spading—and finally, the surface must be raked smooth and fine.

Ordinarily I do not feel that it is worth while to start annuals indoors in pots or flats—but perhaps that is because I always have so many other things which require the space which these would take up. As a matter of fact, however, there is not enough time actually gained to make up for the extra trouble; and for the inexperienced it is far easier to sow the seed where the plants are to grow and thin them out as they come up, than to undertake to transplant them when small and tender. Some will not submit to transplanting.

The poppy is one of these; the poppy has long tap roots. It must be sowed out of doors where it is to grow. Poppy seed are very small—consequently they must be covered lightly with earth; and when the seedlings begin to prick through the ground, you will find that you have several million more plants than seemingly there is room for anywhere on earth. They are quick to germinate and the time to pluck up the superabundance of them is as soon as they are above ground, leaving enough space so that they will stand about four inches apart all over the part of the garden reserved for them. Some find it easier to sow them by mixing the seeds with some finely sifted earth, but this is a matter of choice. The one thing essential is not to drop them in clumps, but to scatter them as evenly as possible, avoiding waste. One packet of seed will sow a large space, properly broadcast. Choose a cloudy day, just after a rain if possible rather than just before one, for a rainfall will be likely to wash the seeds about distressingly and leave spots perfectly bare. Press the seed into the ground after scattering them, using a flat strip or block of wood and patting the bed with it. I usually sprinkle the ground surface with a light sifting of earth after thus pressing them down, to prevent evaporation; but such a sifting must be very light and not touched after it is applied.



Clarkia, an old-fashioned beauty, should be revived. Salmon Queen grows early and in the shade

The snapdragons, *Antirrhinum majus*, hybrids, are really perennials or biennials, which, like so many of their kind, are treated as annuals. They will not be ready to blossom until the middle of summer if they are not started in the house, but from midsummer on they will give constant bloom, even though sown directly out of doors. The soil for them should be light; that is, well lightened if it is clay to start with, by mixing coal ashes through it as well as manure, and perhaps some lime. This should be applied some time before sowing the seeds, however, in order to give it a chance to leach through the earth and do its work. Whether you start them indoors or out, see that the plants are eight inches apart in the beds finally, and four inches back from the edge of them. The height of the variety named—"golden queen"—is about a foot and a half, this being one of the low-growing, dwarfish varieties.

African daisies will usually be in bloom on the First of July if the seeds are planted by the First of May. Wait until the ground is surely warm before putting them in though, for remember that this is a plant from a hot land. It germinates within a week—five days is the exact time usually—and the plants ought to stand a foot apart at least, as they grow to be anywhere from two to three feet high and are much branched. This will bring the foremost

along a border about eight inches from the edge, to allow for the spread of the branches.

Clarkia elegans, Salmon Queen, is the variety which I am using in the partial shade cast by the locust tree; and this is as easily grown as the marigold. Plants should be ten to twelve inches apart or more; and the flowers should be cut as fast as they fade. For cut flowers indoors this is a particularly delightful species, as the blossoms will open in water after cutting, and last well.

Double pinks are almost as lovely as carnations—and they will grow in any soil providing they have full sunlight. For the white variety there is the snowball, for the red, the fireball, and for the nearly black, the mourning cloak—suggestive names which are easy to remember. Actually these are not annuals but biennials; but they are classed and treated as annuals practically everywhere. Sow them as soon as frost has departed for good, and let the plants be about five inches apart. They grow nearly a foot high, and will blossom all summer if the faded flowers are persistently cut away. It is possible to carry them through the winter with some protection, and they will bloom the second season. After this, however, new plants must be raised; and ordinarily it is not thought worth while to attempt to winter the old ones.



Annuals are generally considered the garden reinforcements and fill out perennial plantings, but their use separately in the garden is also desirable

Treat the California poppy the same as the Shirley poppy, as far as sowing is concerned, for it also is averse to transplanting. The seeds may be sown very early as it is not susceptible to cold, blooming even after frost has come in the autumn. *Eschscholzia Californica* and *Eschscholzia,* Golden West, are the two varieties which combine best with the larkspur. In addition to being delightful in flower, this plant has foliage that is distinctly ornamental. The annual larkspur will blossom in July from seeds sown late in April, which is the usual time of sowing. And there is nothing in the garden finer to my mind than the lovely blues of this plant. To be sure it comes in pinks and lilacs that are good colors, but larkspur in anything but blue is somehow not what seems right or natural, whether it is an annual or perennial. So it is in blue only that I ever make use of it—and that usually in combination with some yellow flower such as the *Eschscholzia.* It is a color harmony that never palls.

Lupines in clear rose and white in a great mass where they can have things all to themselves, are as charming as anything that can be grown. Indeed, there are few flowers that have the still and quiet stateliness of these; they always seem to be so perfectly balanced on one foot—and to be so aware of it. Preferring some shade, they are particularly adaptable to the small garden where a certain amount of it is almost inevitable. Sow them where they are to grow, for like the poppy they do not like to be moved.



Double pinks come in great variety and are almost as good as their relatives, the carnations



Plan for the early blooming, large, white starry flowers of the African daisy, *Arctotis grandis*

Xeranthemums are everlastings—and without one of these no annual garden can ever be called complete. Purple, white and rose-colored flowers in mixture is the common fashion of raising them, and indeed pure colors are not offered, the seed being sold only in mixed packets. Not very much space is needed for these, as a few will go a long way; but with the plants a foot apart, half a dozen will not take up more space than any garden can very well spare. They are really very pretty flowers apart from their everlasting qualities—which are rather more against them than for them, through the long association with unused "front parlors" which distinguishes everlastings generally.

For years verbenas have been neglected, as far as my garden is concerned, but suddenly I found myself wanting them again. Along with nearly everything else in the line of annuals, they have been improved and developed and made over into something so splendid that I am sure they do not know themselves. These are supposed to be started indoors or in a hotbed; and they cannot be sown outdoors until May. So if flowers are wanted before the end of July, there is really no choice in the matter. A small flat will furnish space for a great many seedlings however; and instead of transplanting to flats or boxes of any sort, I personally would recommend the little paper pots to the small grower. It is possible to make these for oneself, out of a heavy wrapping paper such as any

(*Continued on page* 315)







HOUSE & GARDEN'S GARDENING GUIDE—1913

VEGETABLES	VARIETIES	DISTANCE APART IN ROWS	DISTANCE ROWS APART	SEEDS OR PLANTS FOR 50 FT. ROW	DEPTH (IN.)	NO. DAYS TO MATURE.	REMARKS.
EARLY HARDY CROPS.							**APRIL 1ST TO MAY 1ST.**
ASPARAGUS	Palmetto; Giant Argenteuil	1 ft.	3 ft.	50	4	1 yr.	Trench rows and cover in manure with four inches of soil before planting.
BEET	E'y Model; Columbia; Crimson Globe; Dark Stinson.	4-6 in.	12-15 in.	100-150	1	40-60	First planting extra thick and one-half to one inch deep.
BROCCOLI	E'y White; French	1½ ft.	2 ft.	35	½	50-90	Similar to cauliflower, but hardier.
CABBAGE	Copenhagen Market; Allhead; Succession	1½ ft.	2 ft.	35	½	70-100	Set out as soon as weather permits if well hardened off.
CAULIFLOWER	Snowball; Best Early; Dry Weather	1½ ft.	2 ft.	35	½	50-80	Set out about ten days after early cabbage.
CARROT	Short Horn; Chantenay; Coreless; Danvers	3-4 in.	12 in.	½ oz.	½	60-80	Sow in as light, dry soil as possible; be sure not to cover deep.
CELERY	Golden Self Blanching; Winter Queen	2-3 in.	12 in.	½ oz.	¼-½	125-150	In seedbed for transplanting later; set out before plants get tall.
ENDIVE	Giant Fringed	12 in.	12 in.	½ oz.	½	75-100	
KOHLRABI	White Vienna	6-8 in.	18 in.	¼ oz.	½	65-85	Thin out as soon as possible; use while young and tender, not over two inches in diameter.
LETTUCE (plant)	Mignonette; Grand Rapids; Wayahead; Iceburg; Big Boston	8-12 in.	12-15 in.	¼ oz.		60-100	
LETTUCE (seed)	All-season's; Brittle Ice; New York	12 in.	12-15 in.	50	½	40-85	Sow thinly in seed bed and transplant for best results.
LEEK	American Flag; Giant Mussleberg	3-4 in.	15 in.	½ oz.	½	120-150	Sow in seed bed and transplant for best results.
ONION	White Queen; Prizetaker; Danvers; (3) Southport Globes	2-3 in.	12-15 in.	½ oz.	½	120-175	Sow as early as possible; do not thin out until well started.
ONION (seedling)	Ailsa Craig; Gigantic Gibralter; Prizetaker	4 in.	12-15 in.	150	¼-½	90-150	Cut back tops a third to a half, roots two-thirds when setting out.
PARSLEY	Emerald	4-6 in.	1 ft.	½ oz.		90-110	Soak seed in lukewarm water for a day before planting.
PARSNIP	Improved Hollow Crown; Offenham Market	3-5 in.	15-18 in.	¼ oz.	½-1	100-150	Sow quite thickly; if the soil is not mellow, trench deeply before planting.
PEAS (smooth)	Best Ext. E'y; Alaska; Clipper; Pilot	2-4 in.	3 ft.	1 pt.	1-2	50-65	Sow few or none at all; the early *wrinkled* sorts are very much superior in quality.
PEAS (wrinkled)	Laxtonian; Blue Bantam (dwarfs); Gradus; Early Morn	2-4 ft.	3-4 ft.	1 pt.	3-4	60-75	The first planting about two weeks after cabbage.
POTATO	Irish Cobbler; Bonnie Best; Eureka	13 in.	28 in.	½ pk.	3-4	60-90	Sprout four weeks in full sunlight before planting, cut to two eyes.
RADISH	Rapid Red; Crimson Globe; Icicle; Chartiers	2-3 in.	1 ft.	½ oz.	½	25-50	Sow little and often; top dress the soil with land plaster before sowing.
SALSIFY	Mammoth Sandwich Island	2-4 in.	15-18 in.	¾ oz.	1-2	125-150	The soil must be deep and finely pulverized; treat as for parsnips.
SWISS CHARD	Lucullus	8-12 in.	15-18 in.	¾ oz.	1-2	50-60	Sow about half as thick as beets; when gathering, cut three or four inches above crown.
TURNIP	White Milan; Petrowski; Amber Globe	4-6 in.	15 in.	½ oz.	½	60-75	Sow thinly as early as possible.
LATE OR TENDER CROPS.							**MAY 1ST TO JUNE 15TH.**
BEANS (early)	Stringless Green Pod; Bountiful E'y Red Valentine	3-4 in.	18 in.	1 pt.	1-2	45-75	Plant in lightest, driest soil available, covering only one inch or so deep for first planting.
BEANS (wax)	Rust-proof Golden Wax; Burpees Kidney Wax; White Wax	3-4 in.	15-24 in.	1 pt.	1-2	55-80	Plant about ten days later than above, or "risk" a planting at the same time.
Beans (lima)	Burpee-Improved; Henderson's Bush; Dreer's Bush	4-6 in.	18-24 in.	1 pt.	1-2	60-90	Plant only with several days fair weather in prospect; put *eye down*.
BEANS (pole)	Burger's Stringless Green-pod; Sunshine Wax; Worcester Pole	4 ft.	4 ft.	¼ pt.	1-2	65-100	Put in poles when planting and thin out to three or four plants in hill when well started.
BEANS (pole lima)	Early Leviathan; Giant Podded	4 ft.	4-5 ft.	¼ pt.	1-2	70-90	Have rich light soil in hills; if necessary assist plants in taking hold of supports.
BEETS	Crimson Globe; Columbia; Dark Stinson	4-6 in.	12-15 in.	1 oz.	2	75-90	If the soil is dry, soak seeds before planting and firm well in soil.
BROCCOLI	Early White French	2-3 ft.	2-3 ft.	35	½	100-140	In seed bed for early fall crops; about June 1st; cut back leaves when transplanting.
BRUSSELS SP'TS	Dalkeith; Danish Prize	1½ ft.	2 ft.	35	½	100-140	Same as above. Transplant latter part of July.
CABBAGE (late)	Perfection Savoy; Danish Roundhead; Danish Red	1½ ft.	2-3 ft.	25-35	½	120-180	Start same as above.
CARROT	Chantenay; Coreless; St. Vallery; Danvers	2-4 in.	12-15 in.	½ oz.	½	60-90	Very fine seed bed; firm well; sow thinly so as to avoid too much thinning out.
CAULIFLOWER	Snowball; Dry Weather	2 ft.	2-3 ft.	25	½	100-140	Start same as above. Must have plenty of water.
CORN (early)	Golden Bantam; Peep o'Day; Howling Mob; Early Crosby	3 ft.	3-4 ft.	½ pt.	2	60-80	Plant, if possible, in sheltered position where it is protected from northwest winds.
CORN (main crop)	White Evergreen; Country Gentleman; Seymour's Sweet Orange; Black Mexican	4 ft.	4 ft.	½ pt.	3-4	80-100	Sow two to four weeks after early; allow only three to four stalks to hill; cultivate frequently.
CUCUMBERS	Davis Perfect; Vickery's Forcing; Fordhook Famous	4 ft.	4 ft.	¼ oz.	1	60-75	If soil is damp raise hill slightly and mix with sand; thin to three or four plants.
EGG PLANT	Black Beauty	2 ft.	2½ ft.	25	25	40-60	Set in rich soil when warm, settled weather is assured; give water in drouth.
LETTUCE	Allseasons; Salamander; Brittle Ice; New York	8-12 in.	12-15 in.	¼ oz.	½	70-90	Transplant or thin to eight inches apart and remove alternate heads as they mature.
MELONS (musk)	Emerald Gem; Netted Gem; Henderson's Bush; Montreal; Spicy	4-6 ft.	4-6 ft.	¼ oz.	½-1	90-120	Make hills rich with old manure and mix in wood ashes and sand if soil is heavy.
MELONS (water)	Coles' Early; Halbert Honey; Ice Cream; Baby Delight	6-8 ft.	6-8 ft.	¼ oz.	½-1	100-125	Treat same as muskmelon; protect both from beetles when small.
PEAS (late)	Boston Unrivalled; Royal Salute; British Wonder (Dwarf)	3-4 ft.	3-4 ft.	1 pt.	3-4	70-80	Sow in double rows about eight inches apart; put in brush before they begin to run.
PEPPERS	Early Neapolitan; Ruby King; Chinese Giant; Sweet Upright	2 ft.	2½ ft.	25		40-60	Treat same as egg-plant; secure potted plants of both to set if possible.
PUMPKIN	Large Cheese; Quaker Pie	6-8 ft.	6-8 ft.	¼ oz.	1	100-130	If space is limited plant where they can run over grass or on the fence.
RADISH	Icicle; Chartiers; White Strassberg	2-3 in.	1 ft.	½ oz.	½	25-50	Sow little, sow often; as a catch crop between beets, lettuce, etc.
SQUASH (summer)	Scalloped Bush; Fordhook Bush; Delicata	3-6 ft.	4-6 ft.	¼ oz.	½-1	60-75	Enrich hills with old manure; set out two or three plants; protect from bugs.
SQUASH (winter)	Hubbard; Delicata; Delicious; Blue Hubbard	6-8 ft.	6-8 ft.	¼ oz.	1		Thin to two or three plants in a hill; watch for borer; protect from bugs.
TOMATO	Bonnie Best (early); Dwarf Giant; Dwarf Stone; Matchless	3-4 ft.	4-5 ft.	15-20		40-60	Get a warm, sheltered position; keep well trained up and all suckers cut off.
TURNIP	Amber Globe (yellow); White Egg	4-6 in.	15 in.	½ oz.	½	60-75	Sow thinly; firm well; thin out early.

NOTE — C. Flowers especially good for cutting. S. Flowers thriving in partial shade. P. Flowers that should be started early under glass, or purchased from the florist.

ANNUALS — While most of these can be sown in the open ground in May or early June to flower the same year, quicker results will be had if they are started early in flats, in the hotbed or window, and transplanted. With some (marked "P" above) it is quite necessary to do this. With annuals especially it is important *to keep the flowers cut off* before ripening seed if a long season of bloom is wanted.





FLOWER	DISTANCE TO PLANT	HEIGHT	COLOR		REMARKS
ANNUALS					
AFRICAN DAISY	6-10	12-15	Rich, various	June to frost	New profuse flowering plants, good for beds and borders.
AGERATUM	6-12	12	Blue, white	June to frost	Popular old-fashioned plants for edging. P.
ASTER	12-24	18-30	Various	July-Sept.	Protect from aster beetle by hand picking and Paris Green. P.C.
BACHELOR'S BUTTON	6-10	15-24	Blue, white, pink	July	Old favorite for borders. S. C.
BALSAM	15-20	10-18	Various	June-Sept.	Use in foreground, where individual flowers will show.
CALENDULA	12-18	18-24	Orange, yellow	June to frost	Very free flowering; masses or borders.
CALLIOPSIS	8-10	12-18	Yellow (orange-brown)	June-Sept.	Of very quick growth, and free flowering. C.
CALIFORNIA POPPY	6-8	12	Orange, yellow	August	Sow early. Beautiful in solid beds. Fine new varieties.
CANDYTUFT	4-12	6-18	White, crimson carmine	June-Sept.	Good for solid masses of color, especially white. C.
CASTOR BEAN	24-36	50-90	Foliage	July to frost	Very rapid grower; screening and tropical effects. S.
CHRYSANTHEMUM	12-18	12-36	Various	August-Oct.	Very easily grown and very showy.
CLARKIA	8-10	18	White, rose, purple	June-Sept.	Bright daisy-like flowers, pretty foliage. C.
COCKSCOMB (Celosia)	8-18	6-18	White, red, yellow, purple.	June to frost	Satisfactory borders, especially for long lines of color.
CORNFLOWER	8-12	12-40	White, blue, lilac	June-Aug.	Greatly improved. One of the best *blue* flowers. C.
COSMOS	24	2-8 ft.	White, pink, red	August to frost	One of the most beautiful of annuals. Start early. P.C.
GLOBE AMARANTH	10-15	18	Pink	July	Also for borders and masses. C.
GODETIA	8-12	12-24	Red, white	July-Oct.	Good for masses. C. S.
GOURDS	12-24	5-15 ft.	Colored fruits	July to frost	Climbers. Fruits of various shapes and colors.
GYPSOPHILA	6-15	12-24	White	June to Sept.	Valuable for bouquets. Make several plantings. C.
LARKSPUR ANNUAL	6-12	18-36	White, blue, pink	June-July	Rich colors. Another of the best blue flowers. C.
LAVATERA	8-12	3-6 ft.	Rose	July	Another good screening plant.
LOBELIA	4-8	6-18	Blue, white	June-Sept.	Beautiful for low borders and edges; also in mass. S.
LOVE-LIES-BLEEDING	10-15	3-5 ft.	Yellow to scarlet	June-July	Good for screens and masses. Will self-sow.
LOVE-IN-A-MIST	10-12	12-24	White-blue	June-Sept.	Old favorite; good for borders.
LUPINE	4-8	12-24	White, blue, pink	June	New varieties give a range of colors. C. S.
MARIGOLD	6-18	10-36	Pale gold to orange	July to frost	Great variety. Dwarf sorts good for edgings.
MIGNONETTE	6	12-18	Golden to reddish yellow	July-Sept.	Prized for its delicious fragrance. Second planting in August. C.
MOONFLOWER	6-18	15-30 ft.	White, blue	August to frost	Most beautiful annual climber. Start under glass. P.
MORNING GLORY	4-12	10-20	Various	July-Sept.	Flowering annual for quickly covering fences, etc.
NASTURTIUM	5-12	12-60	Various	July to frost	Wonderful improvements, especially in the foliage. C. S.
NICOTIANA	8-12	3-5 ft.	White, red	July to frost	Unique, pretty flowers with a jessamine-like fragrance.
PANSY	6-8	6	Various	May to frost	Get *young*, small plants for best results. P. C.
PETUNIA	8-12	12-24	White to claret, mixed	July to frost	Wonderfully free-flowering and showy. S.
PHLOX DRUMMONDII	8-12	12-36	Various, brilliant	July to frost	Splendid for solid beds, or medium height bright edges.
PINKS (Dianthus)	5-8	10-18	White to rose	August to frost	One of the most satisfactory of all summer annuals. C.
POPPY	4	6-10	White to scarlet	July-Sept.	Will not transplant well. Most effective in mass beds.
PORTULACA	4-6	6-10	White, yellow, red shades.	July to frost	Cheery, old-fashioned favorites; full sun, sandy soil.
SALPIGLOSSIS	6-12	12-24	Various	June-Sept.	Wonderful velvety texture and delicate pencilings. C.
SALVIA	6-12	12-36	Scarlet	August to frost	For mass effects the most vivid of all red flowers. P.
SCHIZANTHUS	8	24	Mixed—yellow to lilac	July-August	Good for masses when blossoms are scarce.
STOCK	6-12	12-24	Various	June-Sept.	Beautifully formed; delicate shades; very fragrant. C.
SUNFLOWER	24-36	3-7 ft.	Yellow	August-Sept.	Very rapid growing; useful for screening fences, etc.
SWEET ALYSSUM	4-8	8-10	White	May to frost	Still the most popular of edging plants. S.
SWEET PEA	4-8	2-6 ft.	Various	June-Sept.	For best results start inside in pots, and set out in April. C.
THUNBERGIA	4-10	3-8 ft.	White, yellow, orange	July-Sept.	Good for low trellises and vases.
TORENTIA	6-12	8-15	Blue, white	July-Sept.	Unique; good for vases and hanging baskets.
VERBENA	12-18	6-9	Various	July to frost	One of the brightest, cheeriest and most free-flowering.
ZINNIA	8-12	12-24	Various, brilliant	July to frost	Brilliant masses of color; dwarf, red sort splendid for borders.
BIENNIALS					
CAMPANULA	8-12	18-36	White, blue, pink	June-August	Still popular for both beds and borders.
FORGET-ME-NOT	6	6-12	Blue, white	April to July	The best blue edging plant; the most dainty. S.
FOXGLOVE	10	12-36	Pink, white, various	June	Very easily grown; old favorites for the border.
HOLLYHOCK	12-18	3-7 ft.	White, yellow, scarlet, rose	August-Sept.	Especially valuable against high walls. Gorgeous colors.
SWEET WILLIAM	6-12	12-18	White, pink, red	July-August	Still one of the very best border plants. C.
WALL FLOWER	6	12-30	Brown, yellow	July-Sept.	Fragrant. Early sorts may be treated as annuals. C.
PERENNIALS					
ALYSSUM (Saxatile)	6-12	12	Golden yellow	May-June	Especially useful around rock-work, bases, etc.
AQUILEGIA	10	12-36	Various	June-July	Greatly improved. Very graceful. C.
ADONIS	6	12	Yellow	May-June	Good early flower for border.
ANEMONE	12	12-36	White to rose	August to frost	Should have a place in every garden; extremely beautiful. C.
BELLIS	4-6	6-8	White, pink, red	April-July	Low-growing, beautiful little daises, extremely attractive.
BLEEDING-HEART	12-18	24-30	Purple, pink, white	May-June	Peculiar heart-shaped flowers in graceful sprays. S. C.
CANDYTUFT (Iberis)	6	9	White	May-June	A hardy form of the annual above.
CHRYSANTHEMUM	12-18	24-40	Various	August to frost	If started early, will flower first year. C.
COREOPSIS	12-15	24-36	Golden yellow	June to frost	Free-flowering, for the hardy border. C.
DAHLIA	24-36	2-4 ft.	Various	July to frost	Easily grown; likes very rich, heavy soil. C.
FOUR O'CLOCK	10	30	Yellow, white, red	July-August	Midsummer; good for border.
GAILLARDIA	10-12	18-24	Yellow, crimson	July to frost	If sown early, will bloom first year. C.
HELIOPSIS	8-15	3-4 ft.	Yellow	July-Sept.	Good for mass effects in background.
HELIANTHUS	2-4 ft.	2-10 ft.	Yellow	August to frost	The improved types are truly gorgeous. C.
IRIS	12-18	18-30	Various	May-July	Some of the shades beautiful as orchids. C.
LARKSPUR	12-18	3-4 ft.	Blues	July-Sept.	Best blue flowers for the border.
MONKSHOOD	10-15	36	Blue-white	July-August	Good for borders, but poisonous.
PEONY	24	24-36	Red, pink, white	May-June	Most showy of all border plants. P.
PHLOX (Hardy)	12-18	12-36	Various	July-Sept.	Permanent and satisfactory border plants. P. C.
PINK	6-10	8-12	Various	August-Sept.	Beautiful colors; one of the best for cutting. C.
POPPY (Iceland)	6	12-18	White, yellow, orange	May-Sept.	Flowers on long, stiff stems. Continuous bloomers. C.
POPPY (Oriental)	12-18	24-36	Crimson shades	June-August	Enormous, brilliant flowers; vigorous growth.
PRIMROSE	4-5	4-6	Yellow, pink	April-May	Pretty, early flowers for border or edging.
PYRETHRUM	8-12	12-24	Various	August to frost	Very attractive little edging plant.
RUDBECKIA	12-18	4-7 ft.	Yellow	August-Sept.	Good for screening and mass. Rank grower. P. S.
SCABIOSA	8-12	15-30	White, various, and blue	June-August	Fine light-blue flowers for cutting, blooming very freely. C.
SILENE	5-6	4-5	White to rose	June-August	Low-growing plant, good for masses or broad edgings.
SNAPDRAGON	8-12	24	Various	July-Sept.	One of the finest flowers for cutting. Hardy with protection. P.C.
VERONICA	8	24-30	Purple	August	Good for edging.

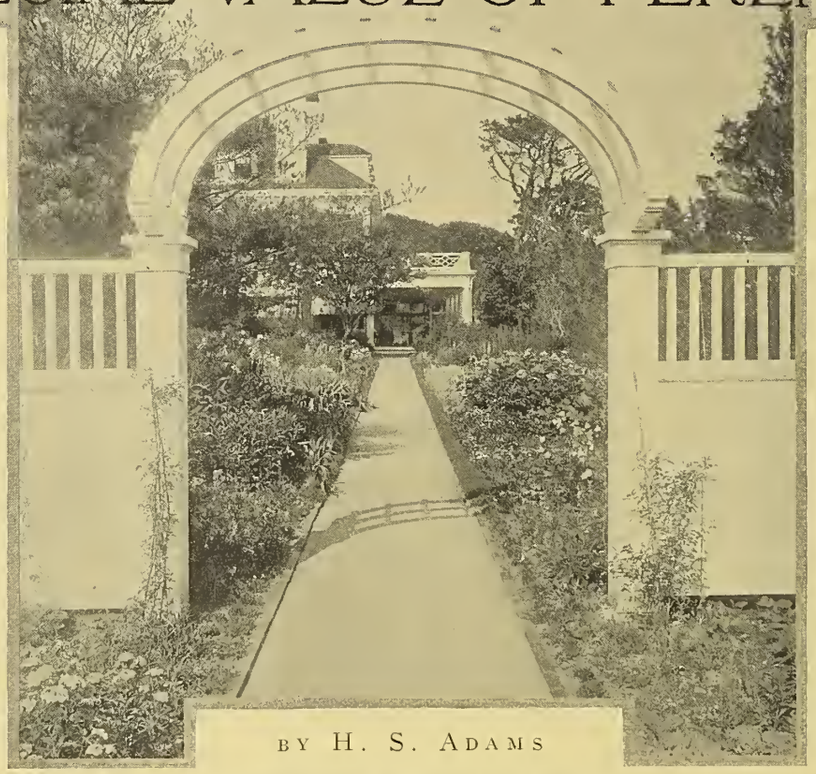
BIENNIALS — These should also be sown every year, that flowers for the year following may be provided. They may be started in May or June and transplanted later to their permanent places. Foxglove and other short-lived perennials, are best treated in the same way.

PERENNIALS —Many of these, if sown early under glass, will flower the first year—some, even from seed sown in the open. They should be grown to fair size in the seed-bed and then transplanted to permanent quarters. The border of hardy perennials should be one of the most beautiful spots in the garden.





THE SPECIAL VALUE OF PERENNIALS



BY H. S. ADAMS

Photographs by Graves and Jones

ALL other plants might disappear and the perennials would give the garden supreme loveliness, expressed in hundreds upon hundreds of individual forms. No one knows how many kinds are in cultivation; if any calculation were made it would be good for only a day, so rapidly are species emerging from the realm of botany to the garden and new varieties appearing on the scene. A glance at a British list of iris, primula or campanula species alone, is enough to stagger one.

The special value of perennials, however, lies not more in the marvelous variety of form and color than in the distribution of their blooming season through the greater part of the year. Without counting the bulbs, which it is the trade custom to catalogue under a separate head, the herbaceous perennials have a range of bloom that has not begun to be realized by amateurs—as the meager representation in the average garden in both spring and autumn demonstrates clearly enough. Without any coddling at all, they can be made to furnish an uninterrupted stretch of bloom for approximately nine months of the year, a thin showing at both ends, it is true, but neither quantity nor variety is everything in the flower garden. With coddling, it is possible to extend this stretch through December, January and February, making a complete circle of the year.

Perennials as a class bloom only once a year, and most varieties adhere to this rule with absolute rigidity. The exceptions usually are early spring flowers that a mild autumn causes to bloom sparsely a few months ahead of time, or summer flowers that have a second spurt, often because the first crop of seed has not been allowed to mature. The average period of perfection of bloom is not long; sometimes it is lamentably brief, and a perennial is rarely so prodigal as the plumy bleeding-heart, *Dicentra formosa,* which has blossoms from spring to autumn.

The actual time of bloom is fixed only so far as the place where the plant is native is concerned. Even then the season, especially an early or late spring, will shift normality a little one way or the other. In gardens a similar inexactitude of time, but more of it, is to be noted. Comparatively few perennials are cultivated in regions where they grow naturally. Not infrequently there is a marked change of altitude, with a corresponding change in the time for blossoming. For example, a primula native to the mountainous heights of Switzerland will bloom earlier in a New York garden, because there the snow disappears earlier. Again, climate differences are such that garden normality is by no means the same everywhere in spring and early summer; the German iris is likely to be in full bloom in northern Virginia in the last week in April, while in southern New England it is not to be looked for until May.

In the matter of hardiness—the withstanding of the winter's cold without artificial protection—there is no fixed rule once a perennial leaves its habitat. Perennials are wonderfully adaptive in this respect, often enduring patiently more cold and more heat than at home, and quite as often giving no sign of minding at all a drop of a mile or more in altitude. But with a fairly large number—and these include, unfortunately, some of the most charming species—the slightest degree of hardiness positively prevents the grower of flowers from moving them. Such perennials must either have protection that amounts to coddling, or, perhaps, be taken up every year and stored all winter where they will not freeze. They are largely responsible for making certain features of hardy gardens of southern Britain the despair of northeastern America, where winters are colder and summers hotter and drier.

Where a plant's local hardiness has not been tested by cultivation, it is a good plan to look it up in an authoritative reference book before deciding about planting. First see how closely the native and the proposed conditions tally; then, if the book does not give the result of tests in the United States, ascertain whether the plant is catalogued by reputable American houses. The perennials that they offer are a very much abridged list as compared with the British ones, and in general they are either reliably hardy as far north as Boston, or relative tenderness is plainly indicated.

All of these things should be clearly understood before any definite attempt to grow perennials is made. Such understanding is absolutely essential for determining the special value of perennials, not merely to the garden world, but narrowed down to the province of your particular garden. What you want to know above all, is the worth



Arabis in its early growth has decorative value, its feathery whiteness making an excellent color combination with red tulips

of perennials to you as working material. This enables the choice from the embarrassingly large list to be made with the intelligence that prevents useless waste of time and money in the endeavor to do what is not worth while in an individual case.

For the great pleasure in growing perennials is to devote time and money to those that are distinctly worth while in one's own case. There is a host of them available after the most ruthless process of rejection that any one of a thousand circumstances would necessitate. The sacrifice will never be so great that the true philosopher will not be able to find solace in the garden of a differently situated neighbor or friend, or a public collection of plants.

In making a list of availables for final choice, take, say, one or two hundred small cards, and from catalogues and garden books pick out the same number of plants of tested hardiness that seem best suited to the required purpose. Write at the top of each card both the botanical and the common name. Then add, on separate lines, the time of blooming, as nearly as you can ascertain for your section of the country and its average duration; the height of foliage as well as bloom wherever possible, the general character of the plant, whether creeping, sprawling, bushy or markedly erect, and, finally, the color. It is best thus to segregate the color memorandum, because this should include not only the color, or range of colors of the blossoms, but like notes as to the foliage. Make a clear differentiation of the many foliage shades, and if the leaves are evergreen, say so. It is well to keep in mind, as to color, that the matter of blossoms and leaves being loose or compact may make a material difference in their use for garden pictures, and in the general decorative effect that you desire to obtain.

Next sort the cards according to season of bloom—going by the month, or, better still, by fortnights, which cover better the average period of perfection. Lay the resultant packs of cards chronologically, in a line on a table and see if there are any distinct breaks in the succession or any fortnights that do not admit of enough choice. Should these deficiencies exist, return to the catalogues and garden books for additional material before proceeding.

The last step is to take up each little pile of cards by itself and either subdivide, according to this or that feature of the memoranda, or at once choose for the planting. The selected cards will then answer as notes from which to make the garden or border plan.

Even with this preliminary study, it would be far better for every one who is growing perennials for the first time to plant most species in rows like so many vegetables, and to do this for a year or two. No matter how much one absorbs from books, it is only by watching a perennial grow a season or more that it is possible to sense its character in every particular, and if this is done in a little home nursery the acquired practical knowledge makes every definite step in the use of such plants as permanent garden material infinitely easier and more effective. No time is really lost and much working experience is gained.



The old type of phlox combines so many good qualities and comes in so many colors and varieties that it should be an essential part of every perennial garden. This garden is small, but shows what can be done with perennials in a restricted area

A good reason for this preliminary planting is the difficulty of getting a clear idea of the foliage spread of a perennial without actual observation. The kinds are too numerous to permit of the spacing tables by which tulips, hyacinths, pansies and geraniums are set out; very few go into the ground excepting by what seems guess work, but what is really an actual though acquired instinct.



Doronicum is a little known but attractive perennial daisy



The plumy bleeding heart (*Dicentra formosa*) is an old-fashioned perennial, easily grown in places where it is difficult to attain bloom



The trollius is worth considering in this year's planting

The foliage spread is important to know before planning a hardy border or garden, in order that enough and not too many plants may be acquired and set out—thus saving money at the outset and time spent in unnecessary replanting later.

Suppose, to get away from the abstract, half a dozen Oriental poppies and as many plants of "baby's breath" (*Gypsophila paniculata*) are set out in a home nursery bed in parallel rows, about fifteen inches apart, the plants themselves nine inches apart in the rows. If the plants are of commercial size they may not seem too close together in the row the first year, but in the second year they will look crowded, and there will be every sign that thinning or complete replanting must be done earlier than ignorance had suspected would be the case.

Possibly ignorance, had the planting been done in a garden, would have taken it for granted that no change would be necessary for years. The second season it is noticed that an Oriental poppy is likely to have a spread two feet in diameter, while the masses of "baby's breath" in the blooming season will perhaps be twice that distance across. Meanwhile this will have been discovered the first year and will be still plainer the second.



In the fall the large blossoms of the perennial anemone provide a variety of color

The poppy blooms early in summer, and soon the plant turns brown and dies down to the ground, while the later blooming "baby's breath" is spreading out toward it and gradually concealing its unsightliness. It is also seen that by the time the "baby's breath" is turning brown, a couple of vines of *Thunbergia alta,* from seed that happened to fall, are making their way over the drying masses—partly because to hide ugliness is one of the special errands on which Nature sends that five-foot climber.

By autumn another thing is noticed; the poppy has begun to make a considerable second growth of foliage and, lest this be too shaded, there is need of cutting away some of the branches of "baby's breath" or else diverting them to one side. Obviously the Oriental poppy and "baby's breath" form one of those dovetailing, perennial combinations which is among the secrets of successful hardy gardens and borders. Here, then, are many facts, and not all at that, learned by the exercise of a little patience in the study of plant character, before attempting to bend that character to one's own use. And the observation of the plants was all the easier because they were in a row.

The only safe general rule for the planting of perennials is to allow a space of ground six inches square for each plant known to be of dwarf or fairly low habit, and a space a foot square for the taller ones. This is a good rule. Unless the plants are seedlings or small cuttings, and sometimes even then the ground will be nearly or quite concealed when the first summer is well along on its course. And there will be ample room for two, three or more seasons' growth, according to the plant's normal rate of increase and the way in which this is helped or hindered by weather conditions.

Whether the plants are set out in rows or in a more or less naturalistic fashion, the rule in question need occasion no complete replanting for a long time. This is avoided by removing alternate plants, or one here and

(*Continued on page* 306)



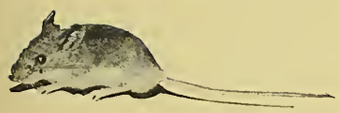
In the spring the yellow flowered *alyssum saxatile* keeps pace with the dandelion

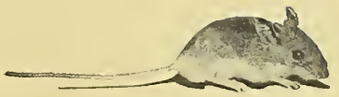
Your Animal Neighbors

THE INTERESTING WILD LIFE WHICH MAY BE FOUND ABOUT THE COUNTRY PLACE—HABITS AND TRAITS OF ANIMALS WHOSE VERY PRESENCE IS OFTEN UNSUSPECTED

BY ERNEST HAROLD BAYNES

Photographs by the Author



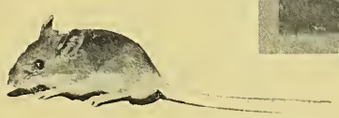


IN order to get the greatest amount of enjoyment out of a home in the country, we must have some wild neighbors, and we must be more or less in touch with them. It is by no means necessary to this enjoyment that our wild neighbors be in evidence all the time, but we must know that they exist and that there is always at least the possibility of seeing them. For example, a wood in which deer are known to live, but in which we may not actually see one more than once in five years, has for us a charm which is never possessed by a wood where there is no possibility of seeing a deer.

The very uncertainty of the movements of our wild neighbors adds to our interest in them. A thousand times a year they give us bits of unexpected pleasure which we should not get at all if they conformed to "the best usages" of human society. One of my own wild neighbors at the present time is a white weasel or ermine. Long ago he appointed himself Head Rat-catcher to our family, and made our home his headquarters, and there is always a saucer of evaporated milk waiting for him as evidence of our hospitality. Sometimes we do not see him for several days, when suddenly some evening we are thrilled to observe him perched on top of the bookcase, watching us in silence, his eyes glowing like opals in the subdued light. Presently he will come down, nose rapidly about until he finds his milk, and we see him lapping it just as a kitten might do. We look away for a moment, and when we look for him again he has gone, silently as he came, the empty saucer being the sole assurance that our eyes have not been playing tricks on us.



We can easily imagine Brer Fox thinking, "I wonder if I can reach that hen."





Evidently it wasn't such a hard jump after all. But do not condemn the fox entirely, for he is a valuable destroyer of certain pests

Even the humblest of these wild neighbors—even those which are supposed by most country people to have not one redeeming feature, are intensely interesting when we become really acquainted with them. There is an old woodchuck neighbor of mine with whom I am on quite intimate terms. To be sure, we have a mutual understanding about the vegetable garden—that is sacred ground, and he knows about as well as I do that the climate there is unhealthy for woodchucks. Therefore we live at peace, and I in a neighborly way protect him from some of his enemies—the dog, the shotgun and the steel trap. All summer I see him sunning himself on my wall, or standing bolt upright and looking very much like a stump, in the middle of my clover field. In the fall, fat as a well-fed pig, he retires to his underground chamber, where in a bed of leaves and grass he curls himself up and waits for the spring to bring the clover back. Once I called on him in March, and as he did not come to the door, I walked right in, with the aid of a pick and shovel. I found my neighbor in bed, as dead to the world as the "Sleeping Beauty." I proceeded to wake him, not with a kiss, but gently, and he acted much better, on the whole, than a human neighbor would have done under similar circumstances. Instead of saying unprintable things, he merely opened his sleepy eyes, raised himself on his forelegs, yawned the most heartfelt yawn I have ever seen, stretched, and rolled over in bed, by all his actions begging for "just another week."

The chipmunk is another of our neighbors whom we shall see in the warm weather only. He is more sociable than the woodchuck, and if we are not going in for bulbs, and if he does not get the habit of destroying birds' nests, we may live on very intimate terms with him. Last summer one of our chipmunks was so friendly that when Mrs. Baynes was picking wild strawberries, he would put his head into the cup which she held in her hand and pick out the finest berries as fast as she picked them. He was almost human.

Chipmunks often sit on our doorstep within a foot or two of us and eat anything we offer them. Like the woodchucks, they too spend the winter in underground burrows, but unlike the woodchucks, they carry in considerable quantities of food to last them through the long winter. That is



why in the fall we so often see a chipmunk looking like a small boy with toothache on both sides of his face. He stuffs his cheek pouches with cherry pits, nuts, grass seeds, wheat, apple pits and such things, which he carries into his underground galleries for winter use. It is quite surprising what a quantity of food the little fellows can carry in those pouches at one time. Last fall I caught a chipmunk who had been collecting the pits of the black cherry. His pouches were by no means fully distended, yet, when I made him disgorge, I took thirty-one pits from his right pouch and thirty-seven from his left—or sixty-eight in all. I am inclined to think that he could have carried nearly if not quite a hundred.



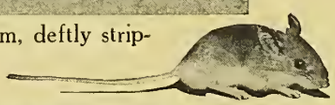
Porcupines are among the queerest and crustiest of our wild animal neighbors



The red and gray squirrels are familiar to everyone, and there is literally no limit to the degree of familiarity on which we may live with them, if we choose. Gray squirrels are naturally disposed to be friendly, and the red ones, though inclined to be suspicious, become very bold once they find that they have nothing to fear from us. They will even come into the house and make their nests if we give them sufficient encouragement, and I once had a red squirrel who lived in a vase on the mantelpiece of my study.



Occasionally you may come upon a raccoon at the edge of a stream, deftly stripping an ear of corn before washing it



But squirrels as intimate neighbors have their drawbacks. They gnaw the woodwork, get into the roofs, and if allowed in the house will not hesitate to destroy rugs or clothing when looking for material with which to build their nests. Worst of all, perhaps, is the red squirrel's propensity for destroying birds' nests. After attempting to get along peaceably with all my wild neighbors, I was at last obliged to shoot a red squirrel in my garden as he sat on the edge of a scarlet tanager's nest, calmly eating the eggs, quite undisturbed by the frantic cries and actions of the birds. Two years ago red squirrels destroyed every bird's nest in my garden, and as I had to decide between squirrels and birds, I chose in favor of the latter; my neighbors have done the same, so that now we have few squirrels, but far more birds than ever before. The gray squirrels, on the other hand, are not nearly so destructive to birds, yet occasionally one of them gets the egg-eating habit, and when he does it is our duty to see that the birds are protected. Squirrels are beautiful, interesting creatures, and I for one am disposed to put up with a great deal of personal discomfort for the pleasure of having them about the garden. But the killing off of their natural enemies has in many places resulted in their increasing to the point where the birds have a very slight chance of rearing their broods, and as the country is sorely in need of more birds, it is our duty to take a hand in the game and help to restore the balance of nature.



There is an old woodchuck neighbor with whom I am on intimate terms

Sometimes we may live in a place a long while before we know who our wild neighbors are. Many of them are so shy and move about so quietly that they see us and take pains to avoid us before we are aware of their presence. Moreover, many of them are nocturnal, and visit our gardens only after dark. After the snow comes, however, we have a better chance, for then the ground is a leaf from Nature's autograph album, and on it each visitor not only writes his name, but a brief account of where he entered our grounds, where he left them, and what he did while he was within our gates. Perhaps we find a track which closely resembles that of a small dog, but with the footprints rather more in a straight line. It enters the garden from the woodland or the pasture, circles the hen-house, with a pause at every crack, passes on to a

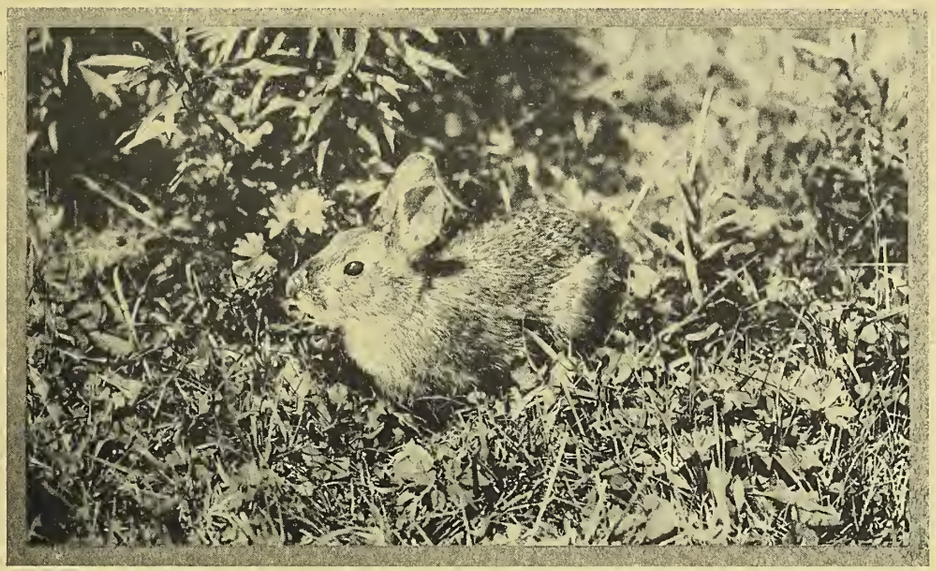
decayed stump in the corner of the garden, where a nest made by white-footed mice—the dainty, large-eyed little fellows shown on these pages—has been torn out and strewn upon the snow, and finally leaves the garden by the cow-path running through the pasture. We may be reasonably sure, then, that we have a fox living not far away, and if we are not so careless as to leave our poultry out at night, we may find him a very useful neighbor. In spite of his bad reputation as a poultry thief, he is a persistent destroyer of wild mice the year round, and in the late summer spends a large part of his time catching grasshoppers, which often form the principal part of his diet at this season.

Or, we may detect the presence of a fox by his odor, not unlike that of the skunk, but milder and quite distinguishable. We often notice it when passing the spot where a fox has spent the night curled up on some hillside, perhaps. It is not a disagreeable odor, and to one in sympathy with outdoor things, always interesting. Speaking of scents, we are too apt to be prejudiced by oft-repeated statements of those who in turn have been prejudiced by similar statements. For example, the defensive odor of the skunk has for hundreds of years been referred to as vile and offensive, and whenever we smell it we are apt, without doing a bit of thinking for ourselves, to pass the adjectives along. Now, as a matter of fact, the odor of the skunk, while overpowering when in large quantities and at close quarters, is not, comparatively speaking, an offensive one when perceived at a little distance and in the open. It is a live, pungent, animal odor, not at all in the class with decaying carrion, badly kept drains and things of that sort, and if we free ourselves from prejudice in the matter, and do our own thinking, we shall not be bothered in the least by it, unless the defensive fluid comes in actual contact with our persons. And even if it does, we can hang our clothing in the sun and wind and the odor quickly disappears, and I am informed on excellent authority that if one will but stand in the smoke of damp hay for a few minutes, he may pass into the house without anyone being aware that he has been having a tête-à-tête with a "wood pussy."





Red squirrels are attractive in many ways, but they have a bad habit of destroying birds' nests



Gentle and timid as it is, the gray rabbit is not much afraid of us if we exercise a little care



A meadow mouse rises on its hind legs, a characteristic attitude

If we live near large woods, where there are big hollow trees or rocky ledges, we are apt at any time to receive a visit from our neighbor the raccoon. If we are careless and leave our poultry houses open at night, the ring-tailed fellow is pretty sure to make a nuisance of himself in some way or another, but otherwise he is a very interesting neighbor to have about. Some day, perhaps, when we are walking through the woodland we shall see the younger members of the family, peering from the entrance of their home high up in some hollow tree, or scrambling after one another over the big trunk. Comical-looking little fellows they are, with bright eyes peering from their black masks. Sometimes we may come upon a full-grown one near the edge of a cornfield, deftly stripping the covering from a stolen ear of corn; or perhaps we shall see him close to the edge of a stream, washing a mouse or some other food before eating. This washing of its food is an unusual habit, and is responsible for the raccoon's German name of *Wasche Bar* or washing bear. The animal does not acquire the habit by instruction from the parents or by observation as some writers would have us believe; it is inherited. Young raccoons which I have taken from the nest at a very tender age, and long before they had



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THE HUNDRED PER CENT GARDEN



THE THIRD TWENTY PER CENT—PART I, PLANTING THE EARLY VEGETABLES —THE VITAL OPERATIONS OF SOWING AND SETTING OUT PLANTS

BY F. F. ROCKWELL

NOTE: *Heretofore the home garden has been looked upon by many people as more or less of a hobby, deserving only as much attention as one usually gives to the pursuit of recreation. That it deserves to be taken up seriously, studied in all its details and developed to the limit of efficiency, is a new presentation of the subject. How to have the very best garden possible on a business basis, is the theme of the present articles although they are also planned to aid those who can give but limited time to the garden's cultivation. They take up carefully and practically one detail after another in natural succession to the completion of the hundred per cent. garden. The first and second twenty per cent. dealt with sowing seeds indoors and with solving the plant food problem, appearing in the February and March issues. Part II of the third twenty per cent. will deal with the raising of late vegetables.*

NO matter how carefully your garden may have been planned, how well the soil has been enriched or how thoroughly prepared, your expectations of one hundred per cent. results will have been foredoomed to failure from the beginning in proportion to the number and the extent of the skips and blank places which occur. Nothing is much more disheartening than to walk through a garden where a strip or patch of brown and barren earth tells the story of some "might have been" vegetable or flower—if conditions had only been made right.

One cause of these unsightly holes and patches in the fair vesture of the garden is poor seed. Poor planting, however, is a far greater cause. It is, of course, human nature to blame it on the seedsman when as a matter of fact one's own ignorant or careless method of sowing or planting is responsible for the failure or the "poor stand" secured.

This dual problem of getting a one hundred per cent. "stand" from seeds and from transplanted plants has a triple-factored solution. It is a matter of strength and vitality in the seeds and plants themselves; of soil properly fitted to receive them, and of sufficient care and skill of placing the former within the latter.

The necessity of securing the very best seed possible and the importance of having the best plants that can be grown, strong, stocky and well hardened, has already been taken up in detail in a preceding article. However, for the sake of those who did not read it or have forgotten the warnings contained therein, I want to say here that you absolutely cannot afford to take chances on seed procured from sources unknown to you or through any indirect route. No matter how small your garden or in how much of a hurry you may be in, order directly from some reliable mail-order house in which you, or one of your friends or neighbors perhaps, has that confidence which is born of experience—and by *seeds* and not by words shall ye know them. The gaudily lithographed packets and the unbranded and frequently misnamed seeds displayed in water pails and washtubs at your hardware dealers or grocers, should be left there for those who are unfortunately less well-informed than yourself.

I have already spoken of soil well enriched and thoroughly prepared. Such preparation, however, was preliminary. The two essentials of the good seed-bed are fineness and freshness. To do your planting right, you should, immediately preceding it, rake with an iron rake the surface that has already been left fine and smooth after the harrow. With this the surface of the soil will be made still more thoroughly fine and smooth and all lumps of dirt and stones removed. Your object should be, however, to pick up just as little trash as possible. Rake lightly, taking a narrow strip with the rake

VEGETABLE	NOTE	VARIETY	NO. OF ROWS	SPACE, FEET
SATURDAY, APRIL 6TH.				
Swiss Chard		Giant Lucullus	2	1+1½
Lettuce	B	Grand Rapids, Wayahead	1	1
Peas	A	Best Early	1	1½
Onion Sets	A	White or Yellow	1	1½
Turnip	B	Early White Milan	1	1
Cabbage, Early	A	Jersey Wakefield	1	1½
Radish	C	Crimson Giant		
Spinach	B	Victoria	1	1½
			8	10½
SATURDAY, APRIL 13TH.				
Cauliflower	A	Best Early; Dry Weather	1	1½
Radish	C	White Icicle		
Celery	D	Golden Self Blanching		
Leek	D	American Flag		
Turnip	B-A	Petrowski; Golden Ball	2	1½+1
Carrot	A	Chantenay	2	1+1
Beet	A	Early Model	2	1+1
Onion	W-E	White Queen (½), Prize Taker (4½)	5	1+4
			12	13
SATURDAY, APRIL 20TH.				
Salsify	W	Mammoth Sandwich Island	4	1½+4½
Parsnip	W	Improved Hollow Crown	4	1½+4½
Potato, Early	A	Irish Cobbler	2	2+2
Radish	B	Crimson Giant	1	
Cabbage	A	Glory of Enkhuisen; Succession	2	2+2
Peas	A-E	Gradus	1	3
Lettuce Seed	B-D	All Seasons; Iceberg	1	2
Peas		Boston Unrivaled	1	2
			16	27
SATURDAY, APRIL 27TH.				
Peas	A	Royal Salute	1	2
Radish	B	Crimson Giant; White Icicle	1	2
Potato (sprouted)	A	Irish Cobbler	1	2
Onion (seedling)	E	Ailsa Craig; Gigantic Gibraltar	1	2+1
Carrots	W	Coreless	4	1+3
Beets	W	Columbia	4	1¼+3¼
Lettuce, Cos	A	Dwarf White Heart	½	1¼
Kohl-rabi	A	White Vienna	½	
			13	18¾

SUGGESTED PLANTING PLAN FOR THE EARLY CROPS, TO TAKE FOUR SATURDAY AFTERNOONS' WORK.

Note.—A—Crops that will be out of the way in time to be followed by others. B—Interplanted "companion" crops which will be out of the way before those next to them need all the room. C—Like above, except that they are planted between *plants* in the row, instead of between rows. D—Start in a special bed, for transplanting later. E—A good item to increase, as any surplus will find ready sale. W—May be stored for winter use.



Drills for various seeds. From left to right: ¼" to ½" deep for lettuce; ½" to 1" for early beets; 2" for early beans; 2" double row for early peas

back and forth in a way which will fill up all little unevennesses on the surface but without digging up any stones, weeds, sod or manure which may be harrowed under.

The object in giving this final preparation just previous to planting is to have a moist surface for that important operation. A finely pulverized soil rapidly becomes dried up for an inch or so on the top and will crumble and fall into any furrow or hole that you may make for sowing seeds or planting, thus interfering more or less with your getting that operation done to perfection, for the seeds or the plant roots must be placed in fresh, moist soil in order to secure quick and sufficiently vigorous reaction.



Firm the newly set plants into the soil with the balls of the feet, removing the plants from the flats with a ball of earth.

Even with seeds of good, strong vitality, and with a properly prepared seed-bed, sometimes it happens that a full "stand" is not secured. Several of these slips twixt the cup and the lip are, too deep planting, planting at a season unsuitable for the seed which is put in, or when the ground is too wet and cold, causing rot, etc. In order that the beginner may not find too late that he has made one of these various possible mistakes, I mention somewhat in detail the several matters which are to be taken into consideration in planting.

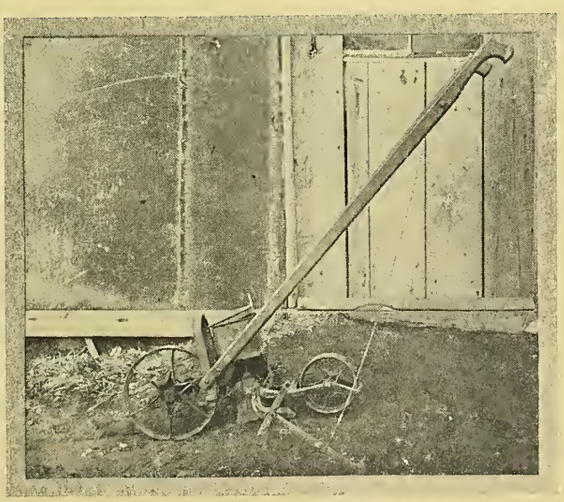


The hundred per cent garden is planned to render all sections easily accessible for frequent cultivation, and arranged with greatest economy of space

It is much safer to go by the season than by the calendar. Any date given for planting, therefore, which you may come across, either in this article or in any table you may be using, should be considered as approximate and not to be gone by absolutely. There is planting of various sorts to be done almost every week in the season from early in April, or as soon as the ground is dried out enough to be properly prepared, until late in the fall when such crops as lettuce and radishes in the cold frames, or onions and spinach to be wintered over in the open ground, are sown. The garden vegetables may be divided approximately into two classes: The "hardy" sorts which may be put in early in the spring in April and May or before all danger of late frost is over, and the real warm weather has begun; and the late or "tender" sorts which should *not* be planted, both on account of danger of injury from the latest frosts, and also because absolutely nothing is gained by putting them in even where they escape a freeze, until the ground has become thoroughly warmed up. Such tropical heat-loving plants as tomatoes and peppers will not be any the earlier and may be severely checked by being set out too soon by the over anxious gardener.

There is an old rule that seeds should be covered to a depth of some four times their diameter. But as most amateur gardeners are not in the habit of carrying a pocket micrometer about with them, it would be perhaps more helpful though not as concise to say that small seeds, such as radish, lettuce or onions should be covered to a depth of one-fourth to one-half an inch; medium-sized seeds, such as beets, spinach and parsnips, one-half to one inch; and larger seeds such as peas, beans and corn at a depth of two to four inches. But the season at which the planting is done and also the weather at the time of planting must be taken into consideration as well as the size of the seeds.

The first planting of peas and beans should be as shallow as one or two inches because at this season there is still plenty of moisture in the top layer of the soil, which is more warmed up than that deeper down. The same varieties planted in mid-season for a late crop, however, would be planted at a depth of three or even four inches in light, dry soil, because the upper surface would be too hot and dry to insure proper germination. As a general rule, planting that is done late in the season or at any time when the weather is hot and dry and likely to continue so, should be about twice as deep as that for the same varieties early in the spring or in cold, rainy weather.



The combination wheel hoe and seed drill is indispensable to the modern garden, performing all seeding

Even with seeds of the highest germinating power it is necessary to

(*Continued on page* 346)



Here is a good arrangement of phlox and hydrangeas in white and pink tones, affording an attractive and varied mass of light color bloom. It is best to employ more than one variety of flower to produce the desired color effects

Color in the Flower Garden

HOW TO PLANT FOR COLOR HARMONY AND THE AVOIDANCE OF GARISH CONTRASTS—THE WONDERS THAT MAY BE WORKED BY AN ARTISTIC ARRANGEMENT OF FLOWERS

BY IDA D. BENNETT

THE idea which seems to prevail in most gardens is to fill them with flowers and still more flowers, adding whatever caprice of the moment dictates or whatever novelty happens to strike the fancy from time to time.

The color relations which these new additions may bear to the old inhabitants of the garden is, apparently, little thought of, if, indeed, it ever occurs to the owner of the garden that as long as a flower is a flower and has individual merit, there can be any possible objection to its presence. In fact with the average gardener, it seems really to be a matter of pride to possess as many varieties of flowers as possible. But one has not learned the true art of gardening until one learns to hold his hand and to go slowly when adding to the garden's store.

Especially is this true when the garden, as it exists, is a happy expression of color and beauty. It is a safe conclusion that the average garden should be subtracted from rather than increased. If the garden in its entirety is the result of carefully thought out plans, then there is little need of caution, as the owner is not apt to run amuck among strange flowers and unknown colors, but even here it is always well to pause and consider whether it is not well to let the new variety alone, at least one should always take the precaution of informing himself of just the color and shade of all such introductions to the garden. A trial garden is, perhaps, the most valuable possession a gardener can have. Here plants may be grown experimentally and transferred to the permanent garden as they prove their fitness, and there given just the conditions and environment that will bring out their good points to perfection.

To emphasize the value of a color scheme one has but to think of various inharmonious colors and imagine them together, not for one day or for several, but for the entire season of their bloom, through a succession of years.

It is not bad color work that a number of colors should occur in one garden but it is bad work when several tones of a color clash together. As an example; blue and red may appear in the same garden with less discord than scarlet and magenta.

If one has no color scheme and is at a loss to invent one, a visit to the milliners and the massing together of a quantity of flowers will very soon demonstrate how much better the effect of the proximity of certain colors is than that of others, and having determined this, plans may be laid accordingly. When one desires a great diversity of colors then one must remember that white is a great peace-maker and intersperse white flowers liberally between any shades that have the least taint of enmity.

It is seldom the case that a favorite flower must be discarded because of an inharmonious shade, as nearly all flowers come in a wide diversity of tones and colors and among these one may make suitable selection.

When uncertain as to what to use or what is really sought for in color, the adoption of some one color, say yellow with white, will produce a charming effect to which, another year, if one's taste has sufficiently crystalized, may be added another, blue or pink, and a color scheme obtained that should be satisfying in the extreme. But the use of one color in the garden is a fascinating development of color work and through its adoption one learns much of its possibilities, makes the acquaintance of many heretofore unknown members of old families of flowers and finds it, altogether, a delightful study.

Definite color schemes may be planned for each season of the year, and the early garden filled with masses of colored tulips of the desired shade—scarlet or soft pink with hyacinths to match, and the white of crocuses and other bulbs—the summer garden may be emphasized with the blue of iris, delphiniums, monk's hood, forget-me-nots, anchusas, blue tufted pansies, bachelor's buttons, browellias, lobelias and the like, while the fall garden may be gorgeous with the yellow and white of chrysanthemums, golden glow and dahlias.

It will be found immensely interesting to take the catalogues and make a list of all the flowers of a certain color, together with their time of blooming. You will learn, for instance, that there are a great many more blue flowers than you supposed, and that the same is true of all the different colors, so that if you have a preference for certain shades you will be surprised to find how liberally the florists are catering to it.

A garden which has several divisions or is cut up by shrubbery, arbors or hedges, offers admirable opportunity for color work, as the separate parts can be devoted to separate color schemes rather than to separate flowers. This would add immensely to the interest of a garden, and is worthy of serious consideration in planning a new garden.

There is another arrangement of a color scheme which might appeal to some, and that is the shading of beds and borders of plants. This requires thorough knowledge of the color shades of the flowers employed or the aid of an experienced florist, but very pretty effects can doubtless be obtained by the use of flowers of a given color shaded from the palest tints down to the strongest that are obtainable. Pansies afford an excellent opportunity for this form of planting and delphiniums another, as these shade from the purest white down to the strongest ultramarine. Roses give an infinity of shade gradations, and some very successful color schemes may be worked out by their use.

Where one has the knack of so growing roses that they will give a mass of bloom at one time, the rose garden, laid out in concentric beds surrounding a central bed of tree roses, is excellent, the roses shading from a rich, dark crimson at the center trees through successive and lightening shades to pale pink or pure white, at the outer edge, or if you prefer, the center may be white shading to a dark tone at the border.

Often it will be found necessary to employ more than one variety of flower to produce the desired color gradation, but this only adds to the interest and tests or increases one's knowledge of flowers.

There is another point to be borne in mind in planning the color effects of the garden, namely, the effect the color has upon its apparent dimensions. The presence of white always brings the planting nearer to the eye, while blue retires it so that where the effect of space is to be increased, as in small gardens, it will be wise to plant the white and light colors near the front of the garden using such colors as lavender, mauve and, especially, blues for the rear beds, as this will make them appear further away and so apparently increase the size.

For the benefit of those who may care to work out definite color schemes in their garden or in separate portions of it, the following list of plants and their season of bloom is indicated, and arranged in order of color as follows:

BULBS

A WHITE GARDEN

NAME	SEASON OF BLOOM	HEIGHT
Crocus-Giant White	March and April	4″
Hyacinth-Bouquet Royal, Duchess of Bedford	March-April	9″
Prince of Waterloo, La Tour d'Auvergne, Alba-Superbissima, La Grandesse, L'Innocence	——	9″
Tulips-Joost Van Vondel	May	10″
L' Immaculee	——	9″
La Reine	——	10″
Pottebakker, White Hawk	——	10″
Double La Candeur, Rose Blanche	May	8″
Narcissus-Poeticus	April-May	12″
Alba Plena Odorata	——	12″



Vines and shrubbery around the house should be free from unpleasant c olor contrasts and it is frequently better to have entirely different hues than colors more nearly allied. White is a splendid medium in which to dissolve harsh contrasts

BULBS—*Continued*

NAME	SEASON OF BLOOM	HEIGHT
Anthericums	May	18″– 2′
Eremurus	May-June	4′ – 8′
Gladiolus-White Lady	July-August	2′ – 3′
Iris, Ger.	May	2′
Iris Japonica	July	2′
Lilium candidum	June	2′ – 3′
Lilium auratum	August	3′ –4′
Lilium Giganticum	August	6′ –10′
Lilium Longiflorum	June	2′ – 3′



Wonderful effects may be had in the rose garden by gradation of color from crimson to pale pink or to white

Lilium Speciosum album	July-August	2′
Lily-of-the-valley	May	9″
Snowdrops	March	6″– 9″

PERENNIALS

NAME	SEASON OF BLOOM	HEIGHT
Astibe floribunda	June-July	2′
Arabis alpina	April-May	rock plant
Aquilegia	May-June	2′–3′
Cimicifuga racemosa	September-Oct.	2½′–3′
Dicentra sylvestris	May	12″–15″
Dictamnus alba	May	2′–3′
Digitalis	June-July	2′–3′
Funkia subcordata	August	18″
Gypsophila	Aug.-Sept.	15″–18″
Hollyhocks	July-August	6′ –12′
Lysimachia	July	18″
Lychnis chalcedonica alba	July-September	2′ –3′
Stokesia cyanea alba	June-October	15″–18″
Shasta daisy	July-September	2′
Peonies	June	2′
Poppies, California	July	6′
Poppy, double white	July	2′
Phlox: Snowdon, Diadem, Von Lassburg	July-September	3′
Physostegia alba	Mid-summer	3′ –4′

SHRUBS AND FLOWERING TREES

NAME	SEASON OF BLOOM	HEIGHT
Althea-Jeanne d'Arc	September	Tree
Ceanothus	Mid-summer	Tree
Cephalanthus occidentalis	——	——
Cerasus serotina	Spring	——
Chionanthus	May-June	——
Cladrastis	June	——
Clethra alnifolia	July-August	——
Cornus Florida alba	May	——
Crataegus monogyna	May	——
Deutzia crenata candidissima	June	6′– 8′
Deutzia gracillima	May	2′– 4′
Deutzia Pride of Rochester	June	6′– 8′
Diervilla candida	June	4′– 6′
Exochordia grandiflora	May	8′–10′
Hydrangea arborescens	July-August	4′– 6′
Kalmia	June-July	——
Ligustrum vulgaris	Summer	Tree
Lonicera tartarica	May	8′–10′
Opulastero opulifolius	June	——
Oxydendrum arborum	Mid-summer	Tree
Philadelphus, in var.	June	——
Peterostyrax hispida	June	——
Rhododendrons	June	2′– 6′
Roses in var.	——	——
Spirea Van Houttei	May	5′– 6′
Spirea albiflora	Summer	Low Shrub
Syringa vulgaris	May	Tree
Syringa Mme. Casimer Perier	——	——
Syringa Marie Le Grey	——	——

ANNUALS

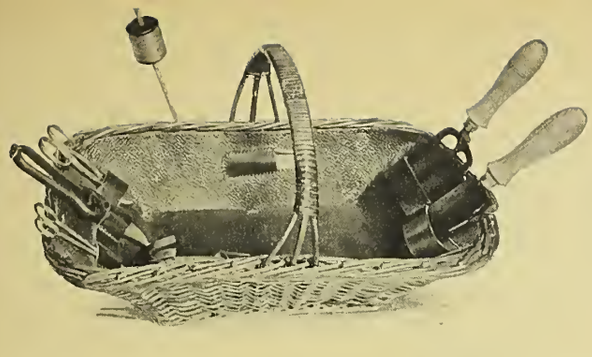
NAME	SEASON OF BLOOM	HEIGHT
Antirrhinum, Queen of the North	Mid-summer to frost	1′
Aster, Giant Comet	August	18″–24″
" Early Wonder	Late June	18″
" Ostrich Feather	August	18″
" Electric	Aug.-Sept.	18″
Balsam, White Perfection	June	2′
Bellis, Snowball	May to Sept.	4″
" The Bride	——	——
Campanula carpataca alba	All seasons	6″
Candytuft, Empress	June	1′
Sweet Sultan, pure white	Summer	18″
Cornflower, white	——	——
Cosmos, white	Aug.-Sept.	3′ – 5′
Delphinium album	——	18″
Larkspur	Summer	2½′ – 3′
Nicotiana	——	2′ – 3′
Lobelia, White Gem	June-November	6″
White pansies	All summer	9″



A row of white asters is refreshing in the garden of brilliant hues. White is the color schemer's talisman

Petunia, Snowball	——	15″
" Pure white	——	——
Double white petunia	——	——
Phlox Drummondi, snow white	——	15″
Poppy, The Bride	Summer	18″
" White Swan (double)	——	——
Portulaca	——	6″
Scabiosa, white	——	2½′
Sweet Peas—		
Emily Henderson	——	——
Mont Blanc	——	——

(*Continued on Page* 330)



Purchasing Garden Equipment

TOOLS THAT ARE NEEDED IN EVERYDAY GARDEN WORK — SOME EXCELLENT INNOVATIONS AND HINTS AS TO WHAT TO BUY

BY K. R. DUNN

FORMERLY they made gardens with a rake and a spade, and they got results, but they had more perseverance and patience than the dilettantes of my acquaintance. I find that where science has advanced in lessening garden labors that the results are better. So if this is your first year at breaking into gardening, you want to fend off any possible chance of mistake, and "launch yourself," as Professor James said, "with as strong an impulse as possible, taking care that nothing shall spoil your enthusiasm until the gardening habit is formed."

As the first labors of the garden have to do with the preparation of the soil, we must consider first a hoe. I am taking for granted that your place is a small garden, and I would urge that you purchase a wheel-hoe. If you have any knack of tinkering with tools, this little garden assistant will be a joy to use. It has a small plow and efficiently turns over the ground. It has cultivator teeth and can cultivate deeply and then smooth the surface. Its hoes are of value in completing cultivation and breaking up clods of soil. It may then be turned into a seeder, and efficiently will sow a continuous row, or seed holes six, eight, twelve or twenty-four inches apart. In one operation it sows and covers, and this it will do for almost all vegetable garden seeds. If you do not have a wheel-hoe, you *may* get over the garden with a spade and a hoe and some backache. Of course, if your place begins to be extensive, a plow and a harrow should be included in the equipment, but on the small place the wheel-hoe may be used instead of these.

There are many makes of plows and harrows and nothing particular to be urged regarding them unless it be that you should get a reversible plow if possible. Without this type you will find that as you cross and recross the garden you pile the dirt up first at one side and then at the other and work a great, deep furrow, that is sometimes very awkward. As to harrows, the ordinary, deep harrow that has lever control to change from deep work to surface cultivation comes in a variety of forms. The argument in favor of the disk-harrow is that it does not tear up the fertilizer and decaying vegetable matter that has been plowed under the soil, but loosens the dirt without pulling it to the exposed surface. In the small garden and beds the hoe and spade take the place of the plow. Most people prefer the in-

(*Continued on page 322*)



The prong hoe combines hoe and rake features



Long handled pruning shears are indispensable for high work



The spading fork, trowel, clippers and pruning shears are necessary implements contained in the garden basket



A useful trinity of tools, including the bow-headed rake



The scarifier, Warren hoe, short-bladed and draw hoes are a good average assortment



The wheel-hoe cultivates both sides of the row at once



The trellis as well as the pergola is considered an architectural feature to-day. When draped with vines it is extremely decorative



The stucco or stone house loses its sense of bareness when covered with climbing, leafy vines such as ivy or ampelopsis

Framing the House with Vines

BY E. J. GOODHUE

THE garden maker in his enthusiasm generally overlooks the vine as an adjunct to his place. It is important especially where the house is new and it is desirable to conceal the bare newness. Perhaps no other department of the garden lends so much atmosphere of homelikeness to the place as the vine and for this purpose it would be well not so much to consider the field as to consider the special locations where vines may supplement the other plantings. In the first place the house itself needs the softening and toning down of a permanent vine cover. But vines are not made to cover up or conceal the architecture of the house. Indeed, they rather are complimentary architectural features, and as primarily their object is that of a drapery, this point should be borne in mind and they should follow the lines of construction; be architectural helps rather than hiders of building forms. Upon the house surface itself there are several sorts of vines that may be used. Because they are of different nature, some twining, some climbing by disc-like tendrils, others needing the support of wires, not all vines are available.

We shall take those first which are surface clinging. The English ivy (*hedra helix*) is evergreen both north and south and is practically hardy, but suffers injury



The supports of the pergola may be made interesting and attractive as well as the top. If such vines as clematis are draped along the pillars or are trained up on some wire framework the effect is particularly attractive

in February or March if grown in a sunny position unless protected by straw or litter of some kind. If on a northern exposure, it does not need this protection. English ivy is of slow growth, but beautiful at all times, and accomplishes the advantages suggested above when its growth has become developed. The house of brick, of stone, or of stucco affords the best surface for its development. Ivy is grown from slips or from plants purchased at the nursery, two-year-old plants costing in the neighborhood of twenty-five cents. A slightly variant form of English ivy is the Irish ivy which has a greater variation of leaf and grows somewhat quicker. Both these vines are interesting for their foliage.

Though it is not evergreen, a vine for similar uses is the Boston or Japanese ivy, *Ampelopsis tricuspidata* (Veitchii). This vine has the advantage of being perfectly hardy and growing on all sides of the wall, being not as particular about the grade of soil as the English ivy, and of somewhat faster growth. In the fall, the wonderful coloring of the leaves adds much in harmonizing any place to the landscape. As with English ivy the vine may be planted in the spring, setting out two-year-old plants and the ordinary wall surface will be very considerably covered with its beautiful drapery within three or four years.

A variety of the *Ampelopsis* is the Virginia Creeper, *quinquefolia*. This vine has not the disc-like tendrils of the two mentioned before, but may be supported on trellis work. Its special service is rather the covering of walls, embankments, and perhaps a dead tree which may be made an object of considerable adornment through its use.



Clematis paniculata makes a feathery mass of white blossoms especially valuable for porch treatment

Another creeping vine which may be used along the basis of masonry and has the advantage of being evergreen is *Enonymus radicans*. It is of rather slow growth, but of considerable beauty in its small leaves; one variety of the plant has a variegated leaf that is very decorative. This plant clings to walls as does the Virginia Creeper, and can be used to cover bare spots. See that it has a good, rich soil, and set the plants out in spring.

Of late years architects have been making lattice work an architectural feature. Simple lattice of rectilinear lines may support a variety of vines that are either twining or creeping. However, lattice work should not be densely covered; a draping is more effective. On such lattice honeysuckle, wistaria, clematis, trumpet creeper, false bittersweet, and other vines may be grown.

The familiar blossoms of the Chinese wistaria with its pale lavender or white hanging racimes, and the orange, scarlet trumpet creeper, *Tecoma radicans,* are hardy vines, also planted in the spring—the fall also. If they have rich soil they may be encouraged to climb on a solid support and grace the appearance of the house.

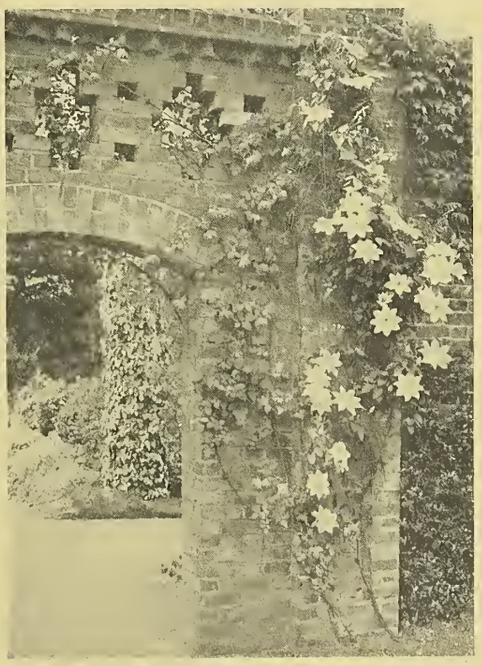
Valuable for house training are various forms of the graceful free-flowering clematis. The large flowered variety (*Jackmani*) with its purplish blossoms which appear in June and July is especially interesting in this connection. Paniculata blooming in the full sun, flowers in the late summer and early fall. It is a very showy vine, well covered with clouds of flowers.

Honeysuckles may be planted in the spring or fall from nursery

(*Continued on page* 319)



Hall's honeysuckle is one of the best varieties, interesting in its foliage and its fragrant blossoms



The large flowering clematis is particularly interesting in its blossoms, but is not nearly as profuse as the other sort

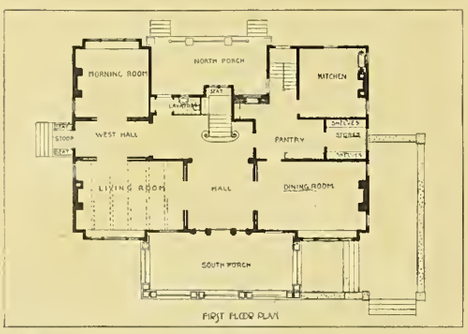


Dutchman's Pipe is a quick grower and makes a good screen or is very valuable for its shade

The Rhoads house does not front upon the street, and obtains privacy thereby, the entrance stairs being upon the side and through a porch that may be inclosed. The gambrel roofed type was utilized here for the coolness obtained by projecting eaves, the windows of all the main rooms on the south side being shaded

THE RESIDENCE OF MR. W. S. RHOADS, RICHMOND, VIRGINIA

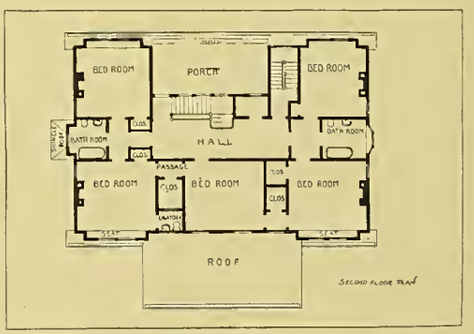
W. Duncan Lee, architect



Although there is considerable hall space, it is so arranged that it really makes an addition to the rooms



A low brick terrace gives entrance to one end of the porch



A bathroom at either end of the main hall is a convenient arrangement, especially when there are guests



The main staircase faces the entrance doorway and is seen through a flat arch—a very agreeable treatment



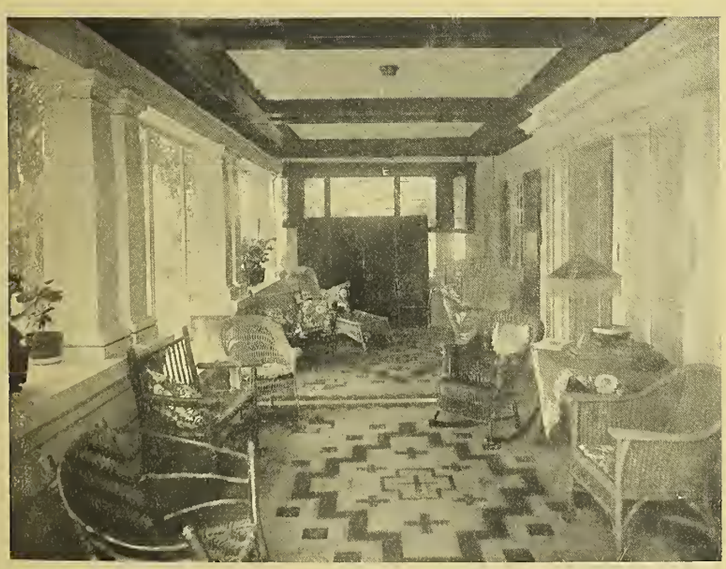
The arch gives the fore part of the entrance hall the semblance of a reception room and is furnished for that purpose



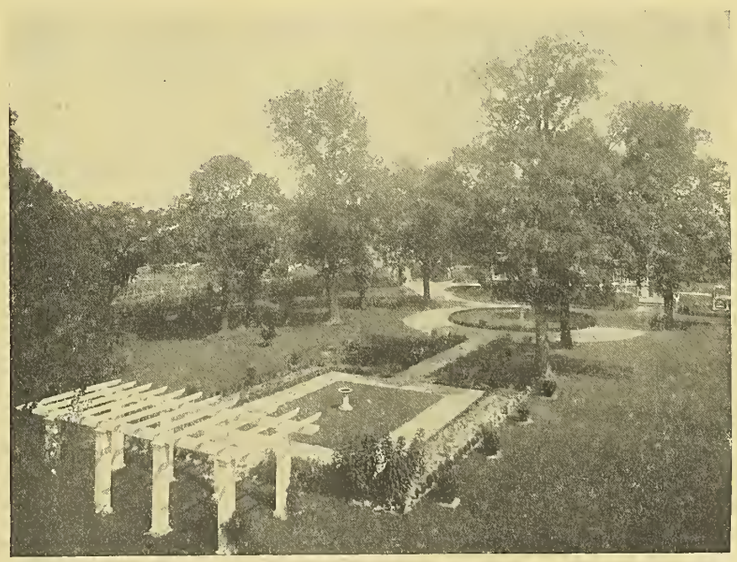
The living-room is particularly airy and is approached from the main hall and the west hall as marked on the plan



The bay in the dining-room looks out upon the garden and runs along more than one-half the southern side, providing light and cheerfulness



The south porch may be entirely inclosed with screens or glass, and since the doorway is at one end, takes on the qualities of a room



At the southern exposure a garden is laid out in formal lines, but it is very simple. Its axis runs through the center of the house



Inside the House

Timely Suggestions and Answers to Correspondents



The Editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope.

New Curtains Made from Old Ones

IN these days when the high cost of living is bothering most of us, thrifty housewives are devising all sorts of schemes to stretch the income as far as possible.

In a well-furnished home in New York City, a woman has found a means of making badly faded curtains look presentable, thereby deferring for another year or so the expenditure of an appreciable sum of money. The suggestion may help some one else to solve a similar problem.

In the house in question, the window shades are dark blue. The dining-room windows, exposed to strong southern and western sunlight, were hung with dark blue embroidered scrim. After a year and a half of service, the lower half of each curtain, below the window shade was faded to an unsightly grayish blue, while the upper half retained its original color and beauty.

The housewife took down the curtains, turned them upside down, and re-hung them. The dark blue shades now show through the faded portions of the curtains, which are now at the upper part of the window, making them the same color as the lower parts, which are fresh and unfaded.

This idea could be carried out in any place where the shades and curtains are of a similar tone.

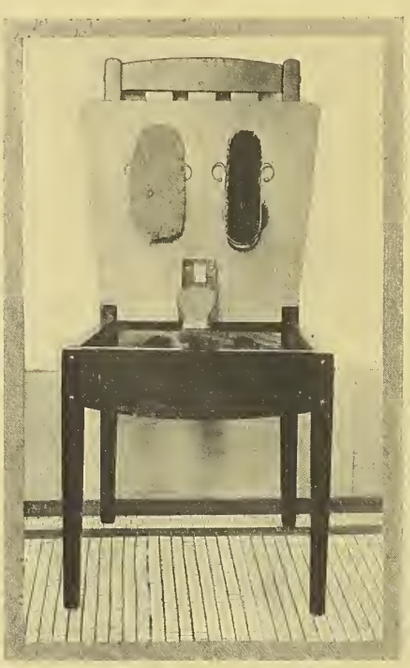
A New Shoe-Blacking Outfit

ONE of the ingenious novelties in household furnishings is a chair that combines all of the good qualities of that article and a shoe-blacking outfit as well, without interfering with the usefulness of either. The seat of the chair is hinged and lifts up, disclosing a box about four inches deep underneath it. In the box are the small brushes and cleaners, with boxes of blacking and polish, and other things necessary for keeping shoes in good condition. Fitted into wire frames attached to the under part of the seat are a large blacking brush and a lamb's wool polisher, while a foot rest with corrugated rubber top is fastened with a hinge just below the brushes, and falls into place when the seat of the chair or rather the top of the box is lifted. With the top turned down the chair is quite like any ordinary chair in appearance. It may be had in dark oak, suitable for use in a hall or dressing-room, or finished in white enamel, making an attractive and useful addition to the furnishings of the bathroom.

The Cellar Problem

TO keep a house in perfect sanitary condition does not mean that you must be sweeping, dusting and scrubbing from morning till night. Let the air and sunshine into every part of the house daily. Do not let any decaying matter stay in the cellar. See that the pipes and drains are free and frequently washed out with strong, hot soda water. Look carefully after the refrigerator and wash and dry all cleaning clothes tubs, pails, etc., as soon as you have finished using them. It is not so much the dust that is in sight as it is the uncleanliness, dampness and decay in dark, unnoticed places that makes a dwelling really unsanitary.

The storeroom for food may be the tiny closet of the flat dweller in a city or the cellar of the village or farmhouse. In the last case it often has a commercial as well as a household value, since it keeps fruits and vegetables in good condition until marketed, as well as until they are needed for the home table; but in any case it should be cool, dry, clean and regularly aired.



The combination chair and blacking-box is a convenient novelty

It may be well to describe a cellar that is badly built and carelessly kept, in order to see what should be exactly opposite conditions. Such a cellar is often dug in wet ground, without sufficient drainage of the subsoil; it may even be in contact with open sewers or drains, which have been proved in certain cases to contain specific organisms capable of producing disease. In many cases the cellar built against an earth wall is not protected from dampness by a layer of moisture-proof cement, and the water may stand in drops on its surface. Again, it may be dug so deeply below the surface of the ground that the windows are wholly inadequate for lighting and ventilation.

It may have an earthen floor, or one of badly matched boards, impossible to keep clean. It will probably have a musty smell, proof positive that mold plants are there and ready to attack any fruit and vegetables that are stored on its shelves or in its dirty bins.

If, in addition to this faulty construction, the cellar is badly kept and odds and ends of refuse are carelessly left about, not only will these conditions favor the spoiling of food, but they may prove injurious to the health of the family living above.

A cellar that meets modern requirements must be dug in ground that is well drained, either naturally or by artificial means. It must be remembered that a cellar is not, first of all, a storeroom; it is an essential part of a well-planned house in helping to keep an equable temperature, and if its walls and floor are what they should be, it prevents dampness and ground air from rising into the house.

If the house is set close to the ground, the cellar windows must be wide enough to compensate for their lack in height and must be set opposite each other to ensure a good draught and free circulation of air.

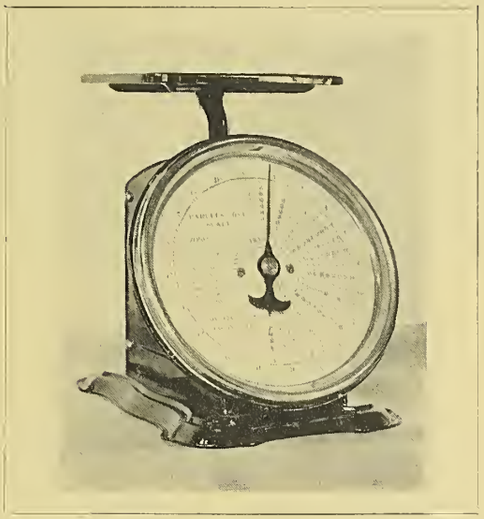
A Parcel Post Scale

SINCE the introduction of the parcel post a specially devised scale for weighing such packages has been constructed and put on the market. It will doubtless prove a decided convenience to many persons who are at a considerable distance from a post office, for it not only gives the weight of the package, but indicates the cost of sending such a weight to any or all of the various zones.

The scale, which is made of iron, has a dial of unusual size, and its capacity is twenty pounds. On the face of the dial, at the left of the indicator is a table of the various zones, which range from any distance under fifty miles for the first zone to anything over 1,800 miles for the eighth and last. Directly below each of the figures that indicates the number of pounds is a column of figures extending to the center of the dial, one for each zone, and opposite each zone figure is the amount necessary to carry that particular weight the required distance.

Although the scales will weigh anything up to twenty pounds, the table of figures is carried out only as far as eleven pounds, the limit of weight for parcel post packages. For further convenience there is also a tin scoop-shape receptacle such as is seen on grocers' scales, to be placed on the standard when there are bulky packages to be weighted.

With an assortment of parcel post stamps and a scale, one can be entirely independent of postman or postmaster, and rest assured that his parcels are sent out properly stamped and free from any risk of detention by the post office officials.



The new parcel post scale is planned for weighing at home

To Renew Wire Screens

WIRE screens may be made to look like new by the application of a good coat of linseed oil. Lay the oil on several days before the screens are placed in the windows, for the dust will stick to the wire and cause a decidedly rough and unattractive appearance unless the oil is thoroughly dried beforehand. The oil will also prevent the screens from rusting, and prove a valuable aid to the housekeeper in preventing rust holes.

How to Clean Kitchen Woodwork

KITCHEN woodwork having much paneling and groove work is hard to clean in the ordinary way, so many angles and corners being inaccessible to the cloth that is customarily employed. And yet the proper cleansing of this woodwork is of first importance, for cleanliness in the kitchen should be considered before that of any other room in the house. To clean the woodwork properly it is feasible to use a vegetable brush covered with one or two thicknesses of cloth to soften the bristles which yet proves yielding enough to reach into every cranny and crevice evenly and with thoroughness.

A Timely Home Suggestion

MANY women in a sewing room constantly jump up and down to get some piece of lace or material to finish a garment. If the hundred and one things a woman needs at her work were all in some convenient place, all this trouble would be avoided.

If there is a large closet in the sewing room or in the room where most of the family sewing is done, get three or four shelves and divide these at convenient heights inside of the closet.

On each shelf arrange four or five boxes and then place the various kinds of laces, velvets, silks, buttons, each in a separate box, marking very clearly just what the box contains.

Two Household Conveniences

In a dining-room which was too limited in space to sacrifice room for a sideboard or buffet the following unique arrangement was devised. There was a window set high in the wall and in the space beneath this a cupboard was arranged by placing shelves. This was fitted with paneled doors, painted to match the trim, and served very well as a buffet. Beneath the shelves a cabinet for table linen was made and the board closing this compartment was hinged to drop downward. A pleasant variation of this scheme might be to use leaded glass in place of the wooden doors. In this way the decorative effect of the china could be made use of even when the doors were closed.

In another house where one of the bedrooms was often used as a sitting-room it was found that drafts coming from the fireplace were very annoying when the fire was not lighted. The owner conceived the scheme of hanging two doors that could be closed over the fireplace entrance. These were of sheet iron with paneling to match the mantel on the outside.



A unique way of replacing the buffet by a cupboard in the wall. This arrangement saves valuable space



The annoyance of drafts from the fireplace may be remedied by hanging two doors such as shown in this illustration



Garden Suggestions and Queries

The Flower Garden



CONDUCTED BY GRACE TABOR
Author of *The Landscape Gardening Book, The Garden Primer, Old-Fashioned Gardening,* etc.

THE garden should have one big surprise for the month of April, and the surprise itself is dependent upon just one thing; that is mass. The startled exclamation is absolutely certain if enough of any April blooming flower lies suddenly spread at one's feet. Crocuses numbering a thousand, pushing up through the sodden leaves of the previous summer, and scattered seemingly as if they had fallen of themselves and taken root haphazard, are as delightfully surprising as the sun bursting through black and sullen clouds. Creeping Phlox is as sweet an amazement as the soft airs and the warm glow of the summery day following the chill one.

Somewhere in every garden there is space that will admit of such planting—a space that can be sufficiently shut off from the general view of the garden to ensure the effect desired without loss to the rest of the garden.

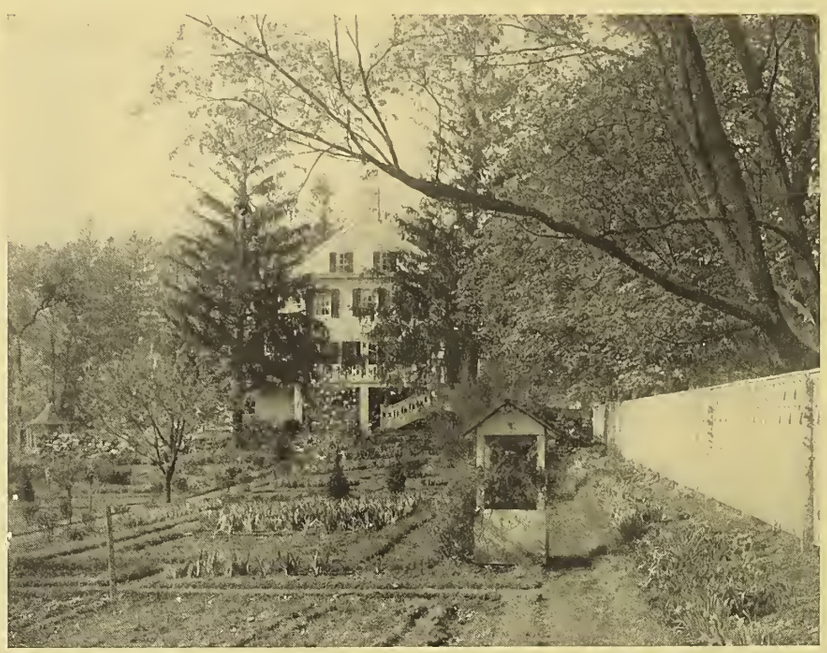
Choice of Plants

SOME of the plants which may be used, beside the Crocus and Phlox already mentioned, are the Jonquils and the Daffodils, the grape Hyacinth (*Muscari Botryoides*), the poppy anemone (*Anemone coronaria*) and the checkered Lily (*Fritillaria meleagris*)—this last is one of the very best plants for naturalizing that there is. The latitude will, of course, vary the season of blossoming of anything planted, and what may bloom in April in the latitude of New York may not do so until May farther north. Generally speaking, however, the flowers that have been named will be on time. The spring snowflake (*Leucojum vernum*) may be a little early, and likewise the dog's tooth violet (*Erythronium Americanum*), but this must not be counted against them. The yellow bird's eye (*Adonis Amurensis*) is an April flower that is not a bulb, as most of those named are; so is the bloodroot (*Sanguinaria Canadensis*), which prefers a place like the woods, with rich earth and shade.

It is not so much a matter of what is used, however; any one of these or any other April blooming plant will be satisfactory, provided a great colony of them is established—enough to make them the dominant thing of their particular locality. Whatever space is given up to them should be filled completely, and with the one kind selected—not with two or several kinds.

The Earth and the Seed

THIS is, of course, the planting month; and everyone is busy planting something. Ground where seeds are to be sown must be very carefully made ready for them, and the annual spading is essential if the seeds are to have half a chance for their lives. If you will try to push a straw into the ground you will realize as never before, I think, the immense energy required to push the plant roots through it.



A well arranged flower garden where space given up to one variety is filled with it in profusion, excluding all other kinds

Mellow and soft and yielding the earth must be, especially for the small seeds. Dig it up to a depth of a foot and turn over the clods and hammer them to pieces with the spade; then rake it and get out the coarse stones and the lumps that will not break apart. If it is heavy and stiff, stir lime through it, with some sand or sifted coal ashes to lighten it. Sandy and dry soil on the other hand, will need humus added; that is, organic matter, capable of holding moisture. Manure well broken down and rotted will furnish this; or old sod scrapings, the tiny fibers of grass roots mingled with the earth in which they grew which the under part of sods will yield, if shaken or scraped.

Make up your mind that you cannot have it too fine and soft, no matter how big and sturdy the seeds are which you are to sow; but if it is very light and powdery, press it together after all the raking is finished, by rolling it or by spanking it with the flat of the spade. For its tiny particles must be close enough together to let the moisture pass through it readily by means of the capillary attraction, and to prevent the presence of too much air about the roots. Then too, they must be close against the roots as these grow—for it is from these particles that the roots draw in through their soft walls the plant food in solution—in quantities so minute that they are quite beneath our conception, and yet in enormous quantities, taken in the aggregate. So the earth must be dense enough to lie close to the roots on every side, without pressing them or offering too great resistance.

Do not cover seeds with too much earth. Remember what they must do—and that their strength is puny after all. Protection from sun and rain and temperature changes they must have, of course; but more than this means just so much extra work for the little plant as it makes its way to the surface. Never cover the seeds with more than four times their own diameter; usually three times is quite enough, and even less is not too little, if the conditions are all favorable to quick germination. An even degree of moisture is necessary; therefore the greater depth is the best, unless you have them where they can be watched closely and watered promptly to prevent drying out.

Keep the earth evenly moist, but *not wet*. More seeds are drowned annually than die of thirst in several seasons, through mistaken zeal in watering. The ideal condition is indicated by soil that will gently crumble apart after being squeezed in the hand. There is more water present than one would suppose.



Garden Suggestions and Queries

The Vegetable Garden

CONDUCTED BY F. F. ROCKWELL
Author of *Home Vegetable Gardening* and *Gardening Indoors and Under Glass*



IN the rush of things that will require attention this month in the vegetable garden, such as sowing seed and setting out the early plants, and covered in detail in another part of this magazine, do not overlook the fact that you have to act now and to act promptly if you do not want the part of your garden in which you expect to have annuals, biennials and perennials to remain more or less a bare spot during the first part of the summer. A half a day devoted to your flower garden now will make all the difference in the world both as to its earliness and as to its approach to your ideal; and before the season is over you will be able to look back and see that it was one of the best days' work you put in.

The vegetable garden, like the flower garden, has much to do with the beauty of your grounds and every effort should be made to keep it as trim and as attractive as possible.

Care of the Lawn

NO feature of the place has more effect on its general appearance than the lawn. The first essential of a good lawn is smoothness. A perfectly even, smooth surface is necessary not only for looks but also because without it the grass cannot be properly taken care of. Where the unevennesses are only slight the lawn will be helped greatly by frequent rolling with a heavy roller. Especially while the soil is moist enough (as it is early in the spring; although it should not be touched while in a wet condition) to be plastic to some extent. Where there are holes and small depressions such as frequently occur where a comparatively new lawn has been made on a filled in foundation, it is necessary to go over the whole carefully in the spring and fill these with fine rich earth until they are built up level with the general surface after having been packed down. A little earth on top of the grass will not be injurious, as the grass will grow up through or where the earth is put too thick for this in patches it can easily be newly seeded.

Where, however, the lawn has never been made properly smooth and even, or where the "grade" which is equally important with the smoothness of the surface. has not been properly made, a more strenuous treatment will have to be given. In bad cases, or where it can be done without inconvenience, the best way will be to remake the lawn entirely. This probably will be no more expensive than trying to have it repaired, because a great deal of the work can be done with horses and plow and harrow, and it will be much more satisfactory to have done the work thoroughly in the beginning than to be continually in the throes of inconvenient patching and repairing, productive of poorer results.



The vegetable garden should be kept as trim as the flower garden, for it often has much to do with the appearance of the grounds

The Question of Fertilizing

IF you can get it underneath the soil where it will be out of the way, and in the position to do most good, there is nothing better than good manure with which to enrich your lawn. But do not, however, give your lawn a heavy top-dressing with it. There are other things which will give you results just as good or better, and be much less disagreeable and also much more convenient. Get a small supply of each of the following—nitrate of soda, fine ground bone and wood ashes, and just before a rain give your lawn a top-dressing with these. Spread the bone and ashes evenly until the ground looks slightly white, but put the soda on very sparingly. Twenty-five pounds will be sufficient for a space 100 feet square. If you will apply it about three times during the season at this rate you will be astonished at the effect upon the growth of your lawn. If you have a fairly good sod to start with, pulverized sheep-manure and prepared horse-manure are also excellent articles to use as top-dressings, and free from the many inconveniences of stable manure, which incidentally it is often very difficult to get in proper condition to use for this purpose.

Procuring the Seed

THE person with a small lawn will not usually bother to make his own mixture of grasses for seed, but he certainly should take every precaution to get only seed which he is very certain will be good, clean and honest. There are special grass seed mixtures on the market which are hardly worth the trouble of sowing to say nothing of the frequently exorbitant price asked. Sow the seed either over the whole lawn or over the spots which have been repaired, on a quiet day if it is possible and when the soil is fairly moist and then roll it in with a dressing of finely pulverized sheep-manure. This will greatly enhance the chances that this new seed will make a strong start and give you as satisfactory results as you had hoped for.

How to Water Properly

WATER is the first requisite and the first remedy to try on your lawn should be in most cases an extra hundred feet of hose and a modern lawn sprinkler. Where the growing crop is kept clipt short and there is no possibility for cultivation as is the case with lawns, the soil dries out very rapidly. The new system of overhead makes possible what we heretofore have never had—fine American lawns.

EDITORIAL

EARLY GARDEN ACTIVITIES

THERE has not been that severity of winter here in the East that we have been accustomed to endure with poor patience. Indeed, winter has been mildly dallying with us. Now a tantalizing warm day that made us feel that summer was at hand: again a rigorous low temperature that presaged months of cold. The false alarms of spring have hardened us. It is the old story of "Wolf, wolf!" and most of us will cease to be excited over spring's awakening until we find a bluebird on a date when the calendar says winter is actually past.

But in the magazine world spring always comes at the same time. No matter what the weather prophet says, the planting time comes regularly at an appointed date. Within the office it is April in February—a real April that is entered each morning and left at night, as we leave the winter when we enter the tropic atmosphere of a greenhouse. It has its drawbacks, it is true, for Christmas begins in August, and is quite passed and gone by December twenty-fifth. There is, however, a longer period of summer weather with us. We enjoy both the false and the true time of flowers and growing things.

In a way one looks backward and forward at the same time. Just now we are attacking those early gardening activities, and the essence of past springs rising so strong in memory make the experience real. Out of those gardening experiences we wish to dwell upon one thing. We wish to give a weak second to the interpretation of Walter Prichard Eaton and agree with him for his emphasis of the humbler joys of gardening.

The hotbed! Could the author have found anything more inherently ugly to the fastidious cherisher of delicately perfumed, daintily hued blossoms? Yet for all its ugliness it is the garden toad with the jewel in its head. Within the small compass of the garden frame goes on the intense struggle of nature into life. In the open ground the phenomena seem less wonderful, less active, than beneath the dew-sparkled garden glass. Once you work the alchemy of the hotbed; once you find yourself master of the inclement spring, you will have passed your novitiate, and the glory of fruit and blossom will seem to be your more intimate creation.

ASTRONOMICAL GARDENING

THE abominable bedding plants must have been the common blot on the English landscape when Cowper wrote. Strange that they should persist until today! As early as "The Garden" was written, 1785, this style of planting was inveighed against. He speaks of such gardening as the work of the "insipid citizen" "plying a misspent industry at his uncouth, ill-chosen task of arranging suns and moons upon the lawn," planning grotesque arrangements until he had "fairly laid the Zodiac in the dust." That is rather a heavy arraignment of the case, but it deserves severe condemnation. With all the possibilities of smooth and rolling lawn *why* will people still persist in mutilating a pleasant green surface with fantastically worked designs as disfiguring as a goitre, having as much connotation of naturalness as that unfortunate affliction? If HOUSE & GARDEN can accomplish the destruction of the obsession to cut up clean lawn space with beds of foliage plants, cannas, etc.; can sink forever the outworn rowboat doing service before the house as a container of scarlet geraniums; can put an end to the astronomical gardening, it will be accomplishing the successful end to a campaign against these abuses started over a century and a quarter—goodness knows how long before that—ago. With all the opportunities offered by naturalistic planting, with decent formal arrangements, with the graceful possibilities of borders and edgings, shun the isolated bed as though it were plague-infested. It has been a garden disease too long, and should not be perpetual—or perpetrated—any longer.

CITY PLANNING

ON May 5th, 6th and 7th the National Conference on City Planning will meet in Chicago to discuss the plans presented for the ideal development of the outlying districts of a rapidly growing city. The outcome of this discussion should be of particular interest to HOUSE & GARDEN readers in these days of mushroom growth. It is but a little while since what were rural districts with broad lawns and large trees have become crowded sections of various great cities now characterized by erratic styles, and, due to pressure, showing a layout devoid of plan. In our largest cities sections of this character are now in the stage of replanning. Experts are trying to make order out of the chaos: to add some beauty to the ugly conglomeration.

..How much better it would be if instead of the spasmodic growth that typifies so much of our present building a purposive plan might prevail. It might be one way of correcting that change in character evident in so many residential sections. In American cities there is almost no permanent home district. Dwellings are no more fixed than the tents of the Bedouins, and the constant inroads of trade interests keep pushing them about from one place to another. There seems to have been no allowance for growth along regular lines in the old plans, which probably accounts for the spasmodic outgrowth of various sorts of districts here and there without purpose and of little duration. It is this fugitive quality, this fickleness of character that the city planning conference may provide against in new work and perhaps give some general instruction for curative measures.

The plan that was submitted some time ago for solution is given in brief below:

1. The tract is assumed to contain 500 acres of land located on the outskirts of a growing city of about 500,000 population, four miles from the center of the city but entirely within its corporate limits.

2. The rate and direction of growth of the city is assumed to be such that the tract when fully developed will be absorbed by the demand for building lots within a reasonably short period and at prices sufficient to repay the original investment in the land of $2,500 an acre, together with the cost of development, interest, taxes, selling cost and a fair profit.

3. The demand is assumed to be mainly for the erection of dwellings and for such other purposes as are normally incidental to such development—retail stores, local places of amusement, schools, churches, etc.

4. In order to avoid discrepancies in legal conditions it is to be assumed that developments of private property are to be governed by the requirements defined in the Building Code approved by the National Board of Fire Underwriters and in the model tenement house law modified to a housing law.

5. The general plan should include: (a) The location of streets and other proposed public properties. (b) The development of private lands in accordance with the general plan and with such control as could properly be exercised by ordinance or statute under the most favorable constitutional limitations in the United States. (c) The recognition of such control as might reasonably be expected to be exercised by public-spirited land companies or other owners of real estate through restrictions in the deeds of lots.

It is not the purpose of the conference to conduct the usual competition and select one design which seems best fitted to cope with the situation. It is rather the idea to combine the excellence of ideas submitted by many, and to get a variety of suggestions.



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The Special Value of Perennials

(*Continued from page* 286)

there, as the colony becomes crowded. In some instances the number of plants may be left the same, and the individual size reduced by cutting off portions with a trowel, which may be accomplished without lifting the plant from the ground. Peonies are an exception to the rule, however, they should be planted two feet or more apart, as they dislike frequent disturbance.

Perennials usually are planted for permanent effects, but there is a growing tendency to use some of those that bloom in the spring and very early in the summer as bedding plants. Seedlings or small plants raised from cuttings are bedded out in the autumn, after the summer flowers have come to the end of their tether, and the year following, directly the height of bloom is past, they are rooted out and either thrown into the compost heap or divided and placed in nursery rows. This is the plan of Belvoir Castle, where every spring there is a superb display of bedded-out perennials on a scale that may be imagined from the fact that the annual consumption of aubrietias alone is some seven thousand.

Such temporary use of perennials within the limits of parterre formality and the set designs of park flower beds is quite common in England. The example is one that might well be emulated in the United States, where, aside from the most familiar bulbs, it is rare to see any plants but pansies, English daisies, arabis and forget-me-nots bedded out in spring. There is a long list to choose from, without touching the doubtful flowers such as various kinds of ranunculus and anemone.

This is not an expensive form of gardening, if one has the time for the additional labor required. Seed of perennials does not cost a great deal and as soon as a stock is started, propagation by cuttings uses up no money and very little time.

When seed is purchased, secure the very best obtainable. This costs more, but is decidedly worth the difference. Americans are apt to imagine that they are paying a high price for seed when they exchange a dime for a packet and to regard a nickel as a sort of standard price. The English, on the other hand, think little of paying the equivalent of twenty-four, thirty-six and forty-eight cents a packet; for they know what superior seed means and the choicest is never too good for them.

Seed is the best means of securing some of the perennials that are not in the American trade. Not only is the risk of importing plants done away with, but specimens born here are better fitted to stand the climate. One of the few American alpine gardens of importance has been thus stocked. Aside from this, the question of using seed depends a great deal on circumstances. It is the quickest way of getting a considerable quantity of larkspur, *Iris pseudo-acorus*, aubrietia, *Bap-*

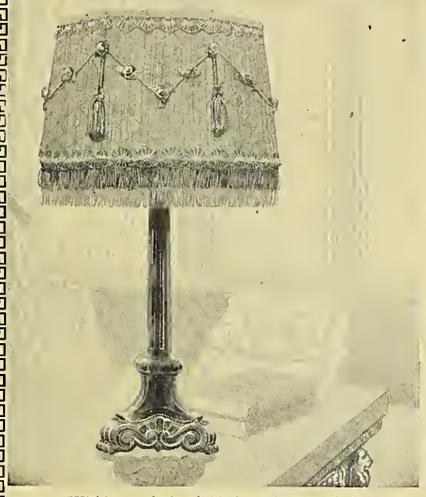
tisia australis, blackberry lily (*Pardanthus sinensis*), oriental poppy, *Amsonia Tabernaemontana,* the maiden pink (*Dianthus deltoides*) and some of the primulas, to name only a few perennials, while it is a very slow way to accumulate herbaceous peonies. The only thing to go by is a knowledge of habit, which varies greatly in the length of time required for germination as well as for the attainment of the capacity of blooming; it is often difficult to get the seed of trollius and *Gentiana acaulis* to germinate until its second spring underground.

Creeping and prostrate plants commonly send out a large number of shoots that root readily, and, indeed, often strike root before being detached. All of the spring-blooming phloxes, arabis, doronicum, *Polemonium reptans,* the ajugas, the veronicas and the stonecrops are readily propagated in this wise. Others, like the primulas and dropwort, can not be grown from cuttings; they form crowns that are easily pulled apart. Cuttings may be taken of *Phlox paniculata,* and it grows quickly from seed, but for ordinary purposes the best plan is to separate the roots. Large clumps may be safely cut with the point of a spade and the same is true of *Tradescantia virginica,* the funkias, homerocallis, Siberian and Japanese iris and all perennials that form a mass of roots so closely bound together that division by hand is out of the question.

There need be no fear of taking cuttings, within reasonable bounds, or of such subdividing. Both are good for perennials, which, it must not be forgotten, occasionally thrive more luxuriously in the garden than in their native haunts. To separate every few years, or every year, if conditions seem to warrant it, is good advice concerning the majority of perennials; divide peonies every seventh year and let fraxinella and the everlasting pea alone indefinitely, unless a transfer is absolutely necessary.

It is a custom, but one altogether too infrequent, to plant some of the perennials—generally grown from seed—in pots. For example this seems to be the only way to get perfection out of the chimney bellflower, *Campanula pyramidalis.* In pots the spikes of blue or white blossoms will shoot up five or six feet and there is nothing more beautiful for an early summer decorative change in the conservatory or for a porch or hall plant. All of the hardy primulas, but more particularly the English, Cashmere and Siebold primroses, the giant cowslip, the polyanthus and the border auricula, are remarkably handsome little pot plants for March and April indoors. The choicer pyrethrums, trollius, *Phlox divaricata* and many of the alpines are quite as handsome in their way. All of the plants may be set out in the garden after blooming, though the chimney bellflower is generally treated as a biennial and thrown away when this has taken place.

There are two more uses for potted perennials. One is to keep a reserve store for



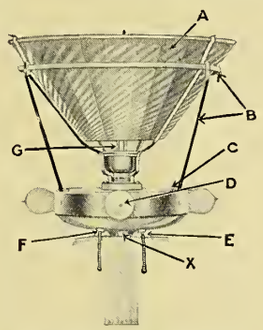
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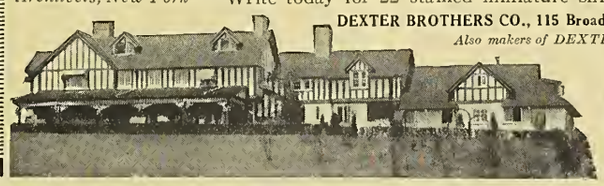
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EDWARD GILLETT, Box B, Southwick, Mass.

filling gaps in the garden, and the other is to solve the problem of those perennials, including some bulbous and tuberous plants, that are unreliable and of questionable hardiness. Among the latter are several of the loveliest windflowers—*Anemone sylvestris, A. blanda, A. St. Brigid* and *A. fulgens;* the turban and Lebanon ranunculas and *Rehmannia angulata.* These, as well as the various hellebores known as Christmas and Lent roses—which, if they survive the winter in the open, do not always bloom satisfactorily in December, January, and March—may be grown in pots and sunk in ashes in a tight coldframe or kept cool indoors until brought out to bloom.

Some perennials hold strictly to species. Others have a perplexing number of varieties, the peony, *Phlox paniculata,* pyrethrum and larkspur running up into hundreds, where the original type may be lost altogether in cultivation. Where there is a choice of varieties, seek out the best. There is the greatest difference in the world, both as to size and color of bloom, between the best of the peonies, phloxes, pyrethrums and larkspurs and those that are neither bad nor yet very good. Of the best select not many kinds; a dozen plants each of the new, double, pale pink pyrethrum, Queen Mary, and as many more of that admirable double white, Carl Vogt, make a much finer showing than a mixture of two each of twelve varieties.

So, too, a massing of the *Festiva Maxima* peony or the old-fashioned red "piny" is better than the same number of plants in varied assortment, while *Phlox paniculata* loses half its effectiveness when there is not a generous grouping of one kind.

Not only be chary of varieties in the hardy garden and borders, but use the same restraint as to the multiplication of species. The wonderful big notes are struck by solid effects such as are to be found in nature. Bring your stock of *Phlox divaricata*—the type color—or *Alyssum saxatile* up to one hundred plants, which is easily done in a few years. Set them out in a long narrow drift of each and the point will be plainly apparent. This course does not call for the slighting of other desired perennials; they can be grouped as fillers, or used in the reserve garden and odd spots on the place. Often space by the south or east wall of a barn may be used for colonizing perennials not required for the garden. They make a fine show there because of the isolation and are always handy for cutting.

Everything considered, perennials are the cheapest of all plant investments. Most of them increase so rapidly that in a few years the result makes the money laid out seem ridiculously small. A large number of the commonest kinds may be had at fifteen cents each and for less by the dozen or hundred. Novelties and rarities are seldom more than half a dollar in this country, but in England all kinds of high prices are paid willingly and some of the 1912 novelties cost twenty-four dollars each.

Your Animal Neighbors

(*Continued from page 289*)

seen water or solid food of any kind, washed crackers in a pail of water the first time they were given the opportunity. I have had many raccoons under observation, and if captured young they take to captivity much better than do most animals; they are like their relatives the bears in this respect. Usually they are very gentle—even affectionate—but sometimes, apparently without cause, they will take a dislike to one, and it has been my experience that after that they are not to be trusted. The most severe biting I have ever received was given me by a raccoon with whom I had once been on the friendliest terms, and I had done nothing that I knew of to merit his change of heart. For all his winning ways and his charming family, the raccoon is a thief who must be reckoned with by those who keep poultry; but as he usually takes his toll at night and from the henhouse, a little forethought will prevent any trouble with him.

A sweet-faced little neighbor with whom we can hardly live on anything but pleasant terms is the gray rabbit. Shy as a schoolgirl, Bunny is not really very much afraid of us unless we are quite thoughtless of her comfort. I am very good friends with a bright-eyed little rabbit who lives in the woods near my house. In the evening she comes out into the lane, doubtless to nibble the clover and perhaps to enjoy the view as well. Sometimes as I am coming home at dusk, I suddenly feel my Great Dane stiffen at my side and looking ahead some fifty yards, I will see Bunny squatting in the middle of the road. I speak to my dog, who looks up into my face, then back at the rabbit, and finally turns his honest old face away as if to avoid the terrible temptation to throw obedience to the winds. And Bunny sits tight until we are almost upon her, when she hops unhastily along in front of us, then turns and disappears within the bushes at the side of the road. As we go past I peer into the shadows, and one shadow, deeper than the rest, is shaped like a squatting rabbit. The back is toward us, but I know that she knows that I know she's there.

In the daytime Bunny lives under an old brush pile in the woods, and I seldom go into those woods without stepping over to see her. Usually the first thing that betrays her immediate presence is her very bright eye, gleaming through the twigs. Then I see her soft gray body, lying in a little hollow in the brown leaves. I never disturb her, but tiptoe softly away again, just glad to know that my little neighbor is well and probably happy. In the winter I often help her out a bit with a carrot or some cabbage leaves, and she seldom finds it necessary to gnaw the bark of the fruit trees. As for the vegetable garden, it is understood that she may come in there occasionally, and though she does nibble the vegetables a bit, she's very welcome to the little she takes.

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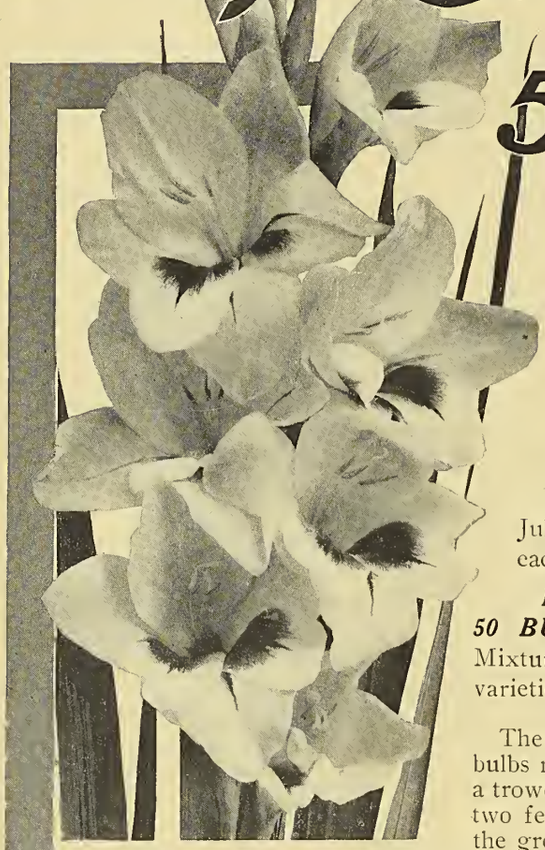
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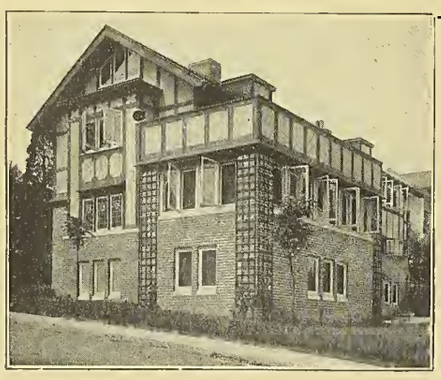
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old neighbors is the porcupine. No matter where you meet him—peering out from his lair in the crevice of the rocks, or looking down at you from the top of a small hemlock perhaps, his every look and sound and movement seem to say, "You go along and mind your own business." If you attempt to approach him from the front he will shuffle rudely off and leave you standing there, and if you literally corner him, he will deliberately turn his back on you, grumbling like an irascible old man.

At night, however, he is very likely to come shuffling around the house, looking for bits of food left by the domestic animals, or to gnaw the wooden handles of garden tools or canoe paddles, to enjoy the salt which has been absorbed from sweating hands. If you hear him and go out with a lantern, don't attempt to be too neighborly on short acquaintance. If you try to stroke him, he will surely resent the liberty and fill your hand full of quills which go in much more easily than they come out, though they must be extracted at once. And on no consideration let the dog go near, or you will probably spend the rest of the evening pulling quills out of his nose and mouth, and you may lose the dog after all.

These are but a few of the wild neighbors who will call on you from time to time if you live in the country, and who, if you treat them with broad-minded charity but without mawkish sentimentality, will add immeasurably to the joy of life. Do not look upon every tuft of clover eaten by a rabbit or a woodchuck, every fallen apple picked up by a deer in the autumn, as a loss; regard these things rather in the light of small payments for the pleasure you get (if you are a normal person) from living on friendly terms with your wild neighbors.



The Various Uses of Shrubs and Shrubbery.

(*Continued from page 275*)

that it is too valuable to be limited to the special division of berry bearing shrubs, for there are not a great number of species of this height and spreading habit which are reliably hardy in the northern parts of the country. Of the diervilla hybrids one may choose according to color preference. Eva Rathke is an attractive deep rose color, "alba" is white. Personally I prefer the former, as it is more distinctive at the time it blooms than white. As before mentioned, diervillas are also arching and spreading shrubs, their branches lying sometimes quite horizontal under their weight of blossoms. Thus they are quite as suitable for the front of a mass as any lower growing species.

The sweet *Daphne Mezereum* or Mezerion pink is one of the most fragrant flowering shrubs in the world and it has a way of blooming a second time late in

the summer which is very delightful. Its period of actual blossom is very early, being before the leaves in March or April. The blossoms are a delicate pinkish lilac, small but produced in sufficient numbers to make up for their modesty.

In the supplementary list there is first the forsythia, familiar to all of us in the spring before anything else is awake, with the little yellow blossoms strewn along every branch away down to the very ground. It fairly blazes with the spring message of warm, golden life, and lights up every corner or spot where it is planted with delightful brilliance. It is always best to put this in the midst of other shrubbery, for its early bloom is seen quite as well when it is so placed; and after it has finished its riot of glory, it furnishes a fine background for other lower growing shrubs to spread their branches against. This is not to say, however, that it lacks effectiveness when placed in the very front of a mass; but only rarely should it be used thus, the better place for it being within the group. Its height also favors its use here.

Deutzia Lemoinei is the most showy of deutzias, but a pink form is perhaps to be preferred, for there is always an abundance of white in shrubbery and when it is possible to do so, it is well to choose something else. So *Deutzia gracilis rosea* may be used instead, for this has pinkish flowers. *Lonicera Tatarica,* Tartarian honeysuckle, also has pinkish flowers; and the Missouri currant, *Ribes aureum,* has delightfully spicy little yellow flowers. Finally, there is the common barberry, *Berberis vulgaris,* which droops under its weight of scarlet berries through all the fall and a goodly portion of the winter, and which colors wonderfully in the autumn. The small yellow flowers of this are not conspicuously in evidence when it is in bloom, yet they are attractive and not the least of its charms, for there are a great many of them, ranged along the branches like little bells ready to chime to every passing breeze.

Of special shrubs there are two divisions: the evergreen species such as laurel, rhododendron, andromeda and the like, and the shrubs so much used for winter effect because of their decorative berries. The latter are as suitable to all sorts of places as those which we have already considered under the general utility heading, but the broad leaved evergreens require special conditions and special treatment which I shall not attempt to go into here. If you wish to make use of these, study the problems concerning them first, and be quite sure that you have the proper conditions and soil for their healthy and successful growth.

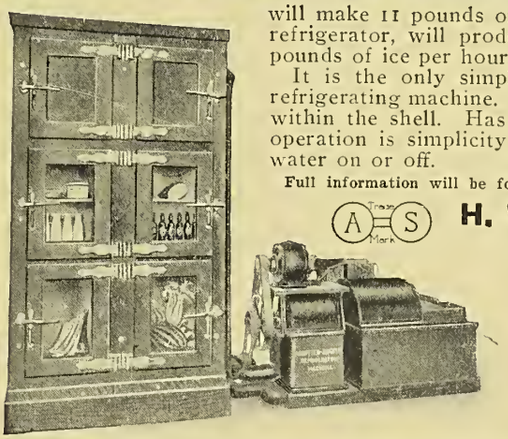
Berry bearing shrubs are seldom conspicuous in flower; so it is hardly possible to secure winter effect and summer effect in equal proportions from a single group. Berry bearing shrubs by themselves, in large masses which show nothing else, are not as attractive as a mingling of them with a suitable number of non-

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fruiting shrubs, or shrubs with inconspicuous fruit. For all berries grow as monotonous as no berries; there must be variety.

The same *Viburnum opulus* that I have already described and recommended among shrubs for general use, is a leader among the ornamental fruited shrubs as well, and quite worthy of taking first place. But close second is its near kin, *Viburnum dentatum*, the common arrow-wood which bears dark blue berries in greatest abundance; and the *Viburnum cassinoides*, called witherod or Appalachian tea, which has great thick clusters of berries that are first pink but turn gradually to deepest blue, all the colors of the transition being present at once.

With these three as a beginning, the common barberry must be ranked next; and after that, *Cornus stolonifera*, red osier, which has bright crimson bark during the winter as well as its bluish-white berries to recommend it. Then there is the low growing Japanese barberry, *Berberis Thunbergii*, and the Japanese rose—*Rosa rugosa*—both with fruits that persist all winter and are not eaten by the birds, the former like the fruits of the common native barberry, the latter, great, red hips as large as marbles. Of course there are many others, too, but these are the choicest, to my mind—and the ones most likely to succeed just for the planting.

And now about the planting: how shall it be done? And when? And where? Of course the plan must answer that last query, so if you have not made a plan, that is the thing to do first of all. Perhaps the diagrams will help you; there is one to meet nearly every requirement, and there is really no reason why they should not be followed exactly, providing the place which is to be planted is just what they are planned for—that is, sunny or shady, according as they are labelled. If none of them are large enough, combine two or three as suggested and make up as large a group as necessary.

The principle of planting is always to *frame* lawn, of course; and always to keep masses of both lawn and shrubbery. There should be no scattering of shrubs about a lawn; this breaks up the mass of both the lawn and the shrubbery. Keep shrubs together and lawn intact. Never fill corners evenly with shrubs, however, in doing this, nor allow them to march around the open space in single file or double file or any way but just as if they happened to grow there naturally, as they happen to grow at the edge of a wood or beside the road away out in the country. Shrubbery must not be handled formally, nor confined to lines of a design as flowers or even trees—under some circumstances—may be. It simply *must* be permitted to assume the formation which nature gives it, a grouping that is characterized by easy, careless, close yet flowing, mass. Corners filled with ever so lovely a selection of shrubs are only absurd caricatures of natural planting, and nothing can make them anything else. There is no such

thing as conventionalizing nature in this instance. Shrubbery must be planted just as nature would do it herself.

The actual operation of planting a shrub is of course just the same as planting anything else, except that a shrub is larger than the things commonly handled, especially by the garden beginner. Holes must always be dug as large as the full spread of the roots; and deep enough to let the specimen go into the ground to just the depth at which it has always grown—no more, no less. Always aim to restore it exactly to the position which it originally occupied, to spread its roots in just the same way, and to bring each little rootlet into contact with the soil just as it was when it rested where it had worked its own way among the earth particles.

This for an ideal, literally, will do more to make it clear just how a thing should be planted than pages of directions could. Roots may be compressed by the packing to which they have been subjected when shipped, but this compression is easily overcome by soaking them awhile in water. Drain thoroughly after such soaking before planting, so that the tiny hairlike roots may separate and take their proper positions without being weighted with water; and so the earth will not cake around these and inclose them in a clay prison where they cannot find food or water.

If the soil in the bottom of the hole wherein a shrub or any plant is to be set, is loosened and worked over and then mounded to meet the downward thrust of the roots as they leave the trunk of the plant, the restoration is likely to be facilitated greatly. Set the plant upon this mounded cushion of earth and shake it up and down as the earth is poured in and around over its roots, and thus work it easily into the ground. Tamp the loose earth down at the same time with a rounded stick like the top of a broom handle, reaching into every crevice and little obscure pocket, and hammering sidewise as well as down. The roots are to be brought into as *close* contact with soil particles remember, as they enjoyed when they pushed their way through between these particles; and this is pretty close. Moreover, every littlest rootlet should be thus restored, and each is rather more important than the large and woody root from which it springs. So do not neglect these tiny hairlike growths, and do not allow them to be caught in pockets where they cannot reach the earth on any side.

In order to do all of this properly, the ground should not be very wet when planting is undertaken. A dry earth is far better to work in than a wet one; indeed, it is impossible to do anything unless the moisture is fairly well out of the soil. So if material arrives in wet weather from the nursery, heel it in temporarily by digging a trench, sloping on one side, laying the plants along with their roots in this, and throwing earth over these roots so that they will not dry out. Dormant plants may be kept perfectly well this way for a

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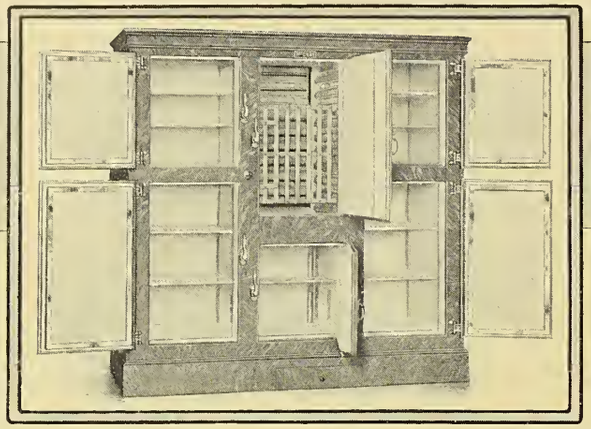
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long time; and even after they start into growth, they will not suffer if the work has been well done. Always cut away any broken roots and leave a clean, smooth stump; and cut back as much of the top —*proportionately*—of any plant you may be moving as it has lost of root; that is, if a third of the roots have been injured, shorten in a third of its top—if a quarter, take away a quarter above.

The following lists summarize the information given above as to the planting of shrubs:

All-Around Planting

1—*Syringa vulgaris* (lilac)
2—*Viburnum opulus* (highbush cranberry)
3—*Cornus paniculata* (cornel)
4—*Philadelphus coronarius* (syringa)
5—*Spiraea Van Houttei* (spirea)
6—*Rhodotypos kerrioides* (rhodotypos)
7—*Diervilla florida* ("Eva Rathke"; Weigela)
8—*Daphne Mezereum* (Daphne)
9—*Forsythia Fortunei* (Forsythia)
10—*Deutzia gracilis rosea* (Deutzia)
11—*Lonicera Tatarica* (honeysuckle)
12—*Berberis vulgaris* (barberry)

Combination Containing Berry-Bearing Shrubs

1—*Viburnum dentatum* (arrow wood)
2—*Viburnum opulus* (highbush cranberry)
3—*Viburnum cassinoides* (witherod, Appalachian tea)
4—*Cornus stolonifera* (red osier)
5—*Rosa rugosa* (Japanese wild rose)
6—*Rhodotypos kerrioides* (rhodotypos)
7—*Diervilla florida* ("Eva Rathke"; Weigela)
8—*Berberis Thunbergii* (Japanese barberry)
9—*Forsythia Fortunei* (Forsythia)
10—*Deutzia gracilis rosea* (Deutzia)
11—*Lonicera Tatarica* (honeysuckle)
12—*Berberis vulgaris* (barberry)

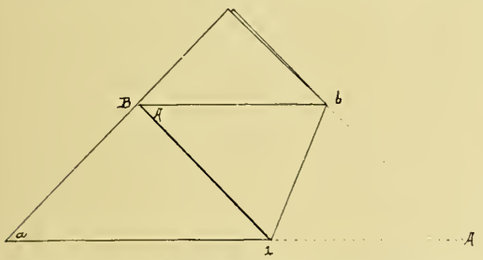
Combination for Shade

1—*Viburnum dentatum* (arrow wood)
2—*Viburnum cassinoides* (witherod)
3—*Cornus paniculata* (cornel)
4—*Cornus stolonifera* (red osier)
5—*Ligustrum Ibota* (privet)
6—*Ligustrum Ibota, Regelianum* (Regel's privet)
7—*Diervilla florida* ("Eva Rathke"; Weigela)
8—*Berberis Thunbergii* (Japanese barberry)
9—*Forsythia viridissima* (Forsythia)
10—*Deutzia gracilis, rosea* (Deutzia)
11—*Ligustrum ovalifolium* (California privet)
12—*Berberis vulgaris* (common barberry)

The numbers on the plans are in each instance the same, but they are understood to refer to the different planting lists, that according to the situation makes one or the other of these groups desirable. The plans are measured, each square being three feet by three feet.

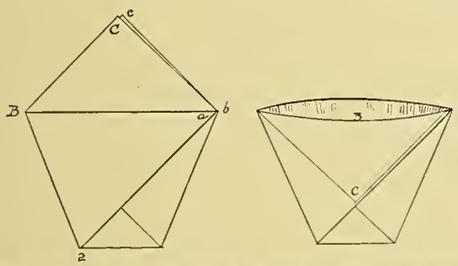
A Folded Paper Flower Pot

USE a tough manila paper that will not readily tear or soak through when filled with moistened earth. Cut into squares from seven to ten inches in size according to the seed which is to be planted. Double back diagonally as the cut shows and crease. Then lay flat upon a table and fold the point *A* over to the left to *B*, creasing the fold *1-b* down sharply. The edges of the paper *B-b* must be parallel with the fold at the bottom, *a-A;* you will note that in order to make them thus, the lower point *1* of this fold does not come in the middle of the bottom line but a little to one side of it.



Fold the dotted triangle over to position B-b-1

Fold *a* up to *b* and crease the line *B-2*, shown in the second cut. Now bring the point of the paper marked *C* down over the front of the "pot" as it lies before you and crease it; then turn the whole thing over and fold the other point, marked *c* down in the same way on the other side. This completes it. The top will not be perfectly even, naturally, the creased points



The final stages, showing completed pot on the right

rising a little on either side. But this does not affect its usefulness. Neither does the fact that it will not stand up unless set close among a lot of its fellows, or into a bed of earth. It is quite as serviceable a flower pot for raising seedlings as any that can be bought—and obtainable in quantity everywhere, for an hour's work some evening.

The Ten Annuals For This Year's Garden

(*Continued from page* 281)

bundle comes home in, of any desired size. And the seedlings transplanted to these are really ready for the ground without further disturbance, for the pot pulls off from the earth, which is lowered into the

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And that is why Goodyears have come to outsell every other tire in existence.

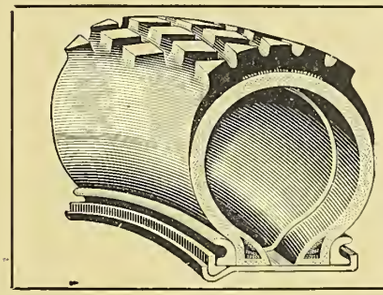
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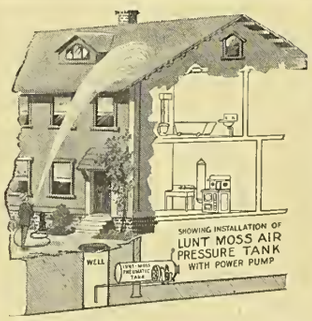
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ground without a root being disarranged. Set them about ten inches apart in the border, and to within five inches of the edge of it, along a walk. The straggling habit of the plants has been much overcome in the work that has been done with them; but they still are somewhat uncertain and wobbly—and need space, in case they do spread about. Their fragrance and beauty as cut flowers is one of their strongest points, and their freedom of bloom is another great advantage. But they were for so long a time such a craze that I suppose one should be somewhat careful in indulging in them now. For they are not up to the mark of a really fine garden standby in many ways.

I have spoken several times of the necessity of picking the flowers from annuals as fast as they fade. This is not only to keep the plant a more sightly object, but to stimulate further bloom. When the seed forming is thus nipped in the flower—not exactly in the bud, though figuratively so—a plant will go on producing more flowers in the effort to produce seeds, that being all it blossoms for anyway. So the removal of flowers induces more flowers, and in this way the entire season may be filled with bloom that otherwise would be over in a fortnight or a month at the most.

Planted sufficiently close for the best effect, very few beds or borders will need much care after the plants are grown—for these themselves will crowd out weeds, and keep the space about them clear. Until they are fully grown, however, it is necessary to till the soil of a flower garden quite as much as the soil of a vegetable garden. Moisture needs conserving here too—and though the annuals are hardy and will grow almost in spite of the roughest kind of treatment, they will do so much better for a little care that it is hard to believe they are the same plants. It is too much to expect to get the best results from any plants that are forced to struggle against the double handicap of weeds and dry, hard baked soil that lack of care induces.

For the sake of the garden's future, a record of this summer is to be kept—not an exhaustive one, but just a simple line or two a day, as the circumstances may demand. Some of the seed I may save, if the variety pleases; indeed, it is quite possible that some really wonderful and valuable variety may be developed from the most ordinary garden, any summer. For the seed of a plant of exceptional color may lead to a find, if consistently saved, the plants of succeeding generations showing this in greater and greater intensity where only seed from the brightest or darkest flowers is saved. This is one of the "by products," so to speak, that adds to the interest of the happy-go-lucky annual garden—the garden of change, of surprises, of greatest careless liberty—the one garden that, more than all the rest, is never finished because every year it is begun anew, right where it began the year before.

Why You Should Grow Small Fruits

(*Continued from page 278*)

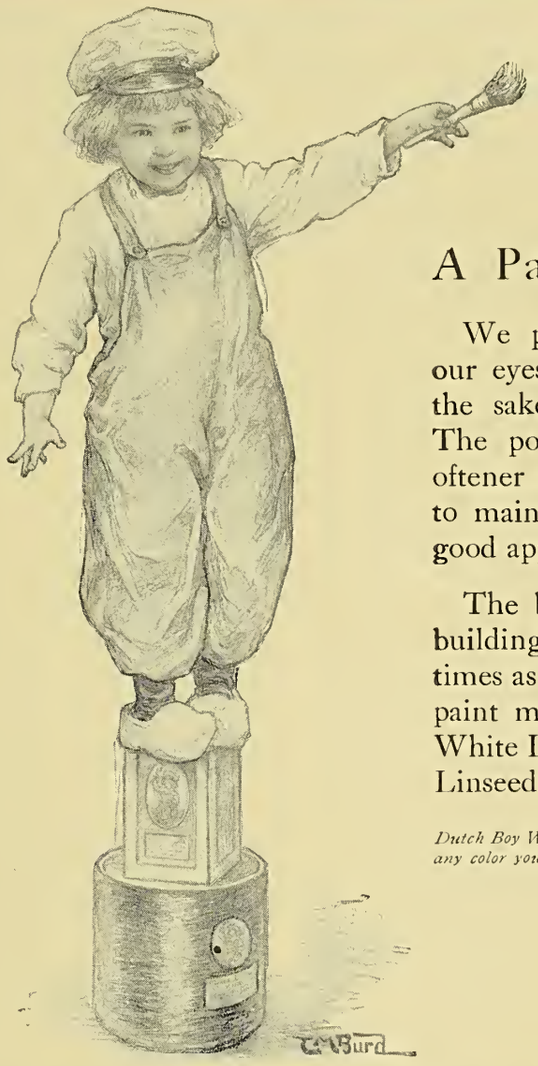
The canes may be cut back to three or four feet high in which case they will be sufficiently stiff and strong to support themselves. More satisfactory results as a general rule, however, will be obtained by giving them the support of a tall, stout stake to which they should be loosely tied with some soft material, or by running a wire along each side of the row so that they can be supported between them. Or they may be planted near a fence where room is scarce, and trained against that.

While most of the cane fruits are very hardy and will stand the winters in cold climates, the only way to make certain of having satisfactory results is to give them a mulch of rough material during the mid-winter months. This is for New York or more northern sections. It would seem at first that it would be quite a job to cover the berry patch six feet deep with leaves or hay, but that little task is got around by putting the canes to bed by bending them over so that they are almost flat on the ground and holding them in this position by burying their tips with a shovelful of earth. Then, just before severe freezing weather, the canes may be covered with soil, rough litter or hay, held in place by a few old boards or stakes.

The winter mulch should be removed in the spring before there is any sign of the beginning of growth, otherwise you will have trouble. When the canes are again tied up to their supports then some more pruning will be in order. Blackberries should be cut back to four or five feet for the main stalks and the side branches should also be cut back a third to a half. The blackberries and the Cuthbert raspberries—one of the finest of the reds, should have the side branches cut back almost two-thirds of the length, the main canes having been cut off to about two feet tall the previous summer to encourage the growth of the side shoots on which the fruit is borne.

Dewberries are naturally trailing plants running along the ground, but in the garden it is necessary to give them a support. This may usually be done by driving a stout stick near each plant and tacking laths across it at right angles and at a distance of a foot or a foot and a half from each other.

You can hardly kill a currant bush once it gets firmly established. But unless you are willing to give it some attention you cannot expect even fairly good fruit. If it can be given fairly heavy soil so much the better, as plenty of water is an essential. In hot very dry seasons with a drouth just before the fruit matures it will be very desirable if not absolutely necessary to give the soil a mulching with hay or rough manure and if possible an occasional thorough soaking with water. This is even more true of the gooseberry than of the currant. Both of these fruits like an open, airy position and should not



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be expected to do their best if stuck up in a corner of a board fence or where the air cannot circulate freely about them. Both of them, but more especially the gooseberry will stand a limited amount of shade. Fertilization should not be stinted. Old rotten manure and commercial fertilizers with a good per cent. of potash used in combination will give excellent results. Two or three plants well looked after will give quite an abundant supply of fruit. Be careful, therefore, in ordering not to overstock yourself, but on the other hand be sure to take the best care of the few that you get.

The greatest factor there is in the growing of currants is a merciless use of the jack-knife. Currants should be so pruned as to be kept in bush form but with what is termed an open center, that is, when you prune, cut out shoots from the middle of the bush and keep those on the outside. Cut out enough of the new growth so that there is no crowding and the wood that is four or five years old.

The gooseberry will require much the same care except that it needs to be pruned even more severely. All branches which touch each other or which trail down to the ground should be cut.

The friendly and gentle currant-worm will, without doubt, make annual visits to both your currant and gooseberry bushes. He usually gets around, bringing a large family with him a little while before the plants blossom. Receive him first with a Paris Green Spray, and if he insists upon coming back after this when the fruit has begun to form, use Hellebore.

The grape has been pre-eminent among garden fruits from time immemorial. Select for your vines, if possible, a place fully exposed to the sun. Even more than with the currants and gooseberries success with grapes will depend on sufficient pruning. The plants as received from the nursery should be cut back three or four eyes or buds at the time of planting. Unlike the currants or cane fruit the grapes bear their fruit on the present season's growth of wood. Furthermore, if left to follow its own will, the grape vine will start out to present you with several times the number of bunches of grapes that it could possibly mature in proper condition. Spare the knife and spoil the grapes!

Therefore heed well the following: When your grape vines come from the nurseryman, no matter what anybody may say, cut them back to three or four eyes when you plant them. And when these eyes have sent out their rapid-growing shoots as they are sure to, do not leave more than two of them. These should be tied up to the stakes, wall, or veranda upon which you are going to grow the vines. If you are going to train it on a regular wire support, only one of these canes should be left—the strongest—and the other should be cut off some time late next fall. If the vine is to be trained over an arbor or some other broad surface, leave both the canes to form the basis of your future grape and shade supply. The prun-

ing you will have to give it thereafter will depend upon the way you grow it: if you use an arbor or some similar surface simply train the main vines over it in any way you see fit, and each year cut the laterals back to within three or four eyes of it. This may seem like an awful waste of nice grape vine—but as the grapes are borne only on new wood, that is on wood of the same year's growth, after fruiting only enough of it should be kept to furnish a starting point for next year's growth, which will bear next year's fruit.

If you find that your grapes are not ripening up as fast as they should in the fall, one of two things, or probably both, may be the matter—first that you have not been sufficiently severe with your pruning, and that the vine has set too many bunches of fruit, or secondly, the fertilizer which you have been applying is deficient in potash. A "2-8-10" fertilizer is very suitable for grapes. If you use an animal manure, you should make up the deficiency by using plenty of wood ashes, or a little muriate of potash.

HOME GARDEN ORDER FOR SMALL FRUITS.
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FRUIT	PLANT	VARIETY	NUMBER	COST
Strawberry	1"x 1" or 1"x 2"	Climax, early	100	$1.50
		Marshall, midseason	100	1.00
		Lester Lovett, late	100	1.00
Raspberry	3x6	The King, red, early	6	.25
		Cardinal, red, late	6	.40
		Cuthbert, crimson	6	.40
		Mumber, black	6	.25
Blackberry	5x7	Mercerau, early	6	.40
		Erie, main	6	.25
Dewberry	5x7	Premo, early	6	.25
		Lucretia	6	.25
Currants	4-5 apart	Perfection, red	6	.75
		Lee's Prolific, black	4	.30
		White Grape, white	2	.20
Gooseberry	5-6 apart	Downing, pale green	1	.15
		Red Jacket, red	1	.15
		Industry, red	1	.20
Grapes	6 or more apart	Green Mountain, E'y white	1	.50
		Moore's Early, black	1	.25
		Compbell's Early (Concord)	1	.25
		Delaware, red	1	.25
		Catawba, dusky red	1	.25
		Pocklington, golden	1	.25
				$9.45



Framing the House with Vines

(*Continued from page 297*)

plants, and will subsist almost any place with little difficulty, but for house use some provision must be made to train the vines upon the wall.

There is one consideration to be taken when thinking of planting directly upon the house wall in the manner here suggested. Select those vines which are free from insects and litter of falling blossoms. You will find that the most satisfactory will develop into those leafy sorts mentioned in the beginning of this article.

When you approach the problem of the porch the number and variety of vines applicable is considerably increased. Here let us repeat again the warning. Follow the lines of construction and do not make vines grow over apparently empty spaces. If you desire screening for the porch or shade, use rectangular trellises or trellis arches and coax your vines on these. A



The Winged Message

Noah's messenger was a dove. In Solomon's time, pigeons were trained to carry messages. Brutus used them at the siege of Modena. They served the Turks in their fights against the Crusaders. In mediæval wars they were more useful than ever before.

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Rhododendron catawbiense
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"And to paint these home pictures we need chiefly American material. We must face this deadly parallel."

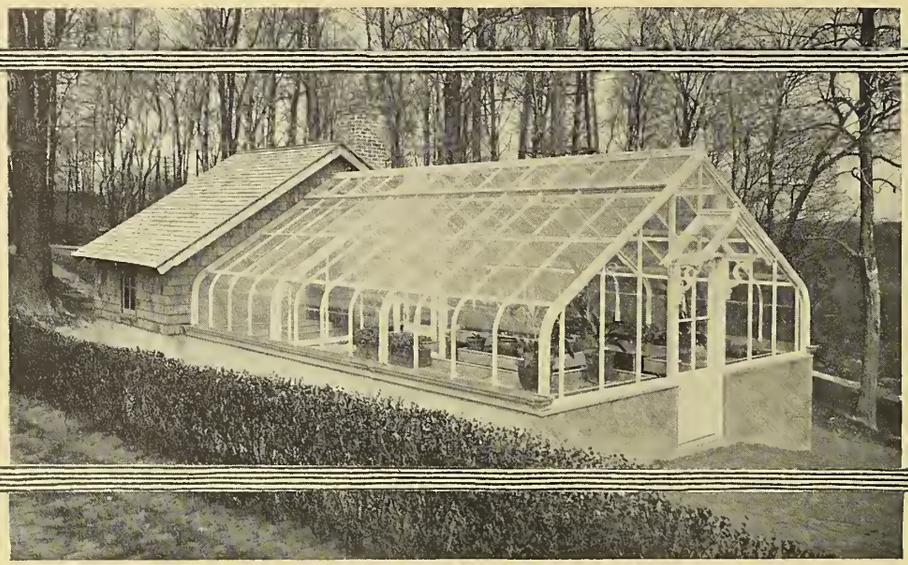
What We Really Plant	What We Ought to Plant
70% European trees and shrubs and horticultural varieties.	70% American trees and shrubs, i. e., native to America.
20% Chinese and Japanese.	20% Chinese and Japanese.
10% American.	10% European and horticultura

Above quoted from Wilhelm Miller's "What England Can Teach Us About Gardening"

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SO many are just like you—they put off finding out the cost of a greenhouse just because they have a notion it costs too much.

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You could have a pretty definite idea what greenhouses of various sizes cost. You wouldn't hesitate about having one.

But you can't advertise greenhouses that way—it's not practical—there are too many varying conditions that it is necessary to carefully consider before a price—fair to each condition—can be given.

One thing is certain, however; for an equal expenditure, it would be hard to find anything which would give you, and those about you, as much genuine pleasure, year after year.

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offer a full line of fruit and ornamental trees, shrubs, roses, etc. Send us a list of trees you want to plant, and we will give you an estimate, or, if desired, our landscape gardener will call on you.

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help in growing vines of this sort is to run a row of staples placed at regular intervals located near the ground. Duplicate this distance on an iron rod or a squared piece of wood and attach the wires, allowing the length you expect to have your vines grow. The wooden support or the iron rod may be held above by staples and the whole vine removed, if it is necessary to do painting, without tearing down the vine. Aristolochia, honeysuckle, woodbine, clematis, climbing rose, morning glory, Allegheny vine, scarlet runner bean, Japanese hop, and kudzu vine are some satisfactory kinds for this purpose. Perhaps it would be well to consider their requirements and their appearance.

Akebia quinata is a shrubby vine with beautiful leaves and dark purplish flowers appearing in May and June, liking a heavy soil.

Allegheny vine, *Adlumia cirrhosa,* grows very quickly, has a mass of light, pinkish flowers blooming in summer, but requires care and attention as it is of delicate growth. It attains a height of fifteen feet.

Coboea scandens will serve to make an easy screen. Its foliage is green, but the leaf veins are a purplish bronze. The flowers are a purplish blue, large and cup-shaped. The vine will often grow to twenty feet, but requires a good rich soil, and should be sown early in the greenhouse.

Clematis paniculata should have a support of chicken wire or some wide meshed framework. Its bloom will come in the last of August or September, and adds beauty with its profuse, fragrant blossoms. *C. Virginiana* grows to about 12 feet, and is another desirable sort.

Dutchman's Pipe, *Aristolochia Sipho,* has large round leaves and purplish shadows and grows to a considerable height. It thrives best in fertile soil in the full sunlight and is a fine shade producer. The flowers are like long curved pipes.

Hall's honeysuckle, *L. japonica,* is half evergreen and grows to about fifteen feet. It is of easy growth but needs to be supported on wires or strings or trained over trellises. The variety *lonicera periclymenum* is the most fragrant type and has pinkish flowers. It blooms till September.

Hop, *humulus lapulus,* is a tall growing vine with interesting fruit and leaves of dark green. The variety *Japonicus* blooms in August from seeds sown out doors in May, and also is self-sowing. It is one of the quickest growing vines.

The kudzu vine, *Pueraria,* is a rapid grower that covers great distances during the summer—sometimes 40 to 60 feet—and is planted from tubers. It prefers sun and well drained soil.

Morning glories are valuable also for quick growing annual vines. The Japanese have made many improvements in them, but the ordinary *Ipomoea purpurata* is still a valued variety. If seed is sown in April, flowers appear in July. This blooming period may be hastened by sowing in a

greenhouse. The vine climbs up strings or wires. The blue form, *I. rubra coerulea,* heavenly blue, is first a purplish red and then a beautiful blue. The bloom of morning glories may be hastened if the seeds are either soaked or notched before planting.

Ipomoea bona-nox is the common moonflower, and has great flowers nearly six inches across. The vine grows to a height of twenty feet and is of great fragrance. The flowers open in the evening, but if planted on the east and west side of the house since the blossoms do not close until in direct sunlight provide bloom all day.

Nasturtium in the climbing sorts makes a very effective companion vine to clematis or the perennial pea or honeysuckle, which vines are often ragged at the base. It is the easiest grown vine, and if planted outdoors will bloom in July. There are various shades of red, orange and yellow, generally mixed together; but where color effect is desired, it is often effective to plant only a single color.

The *Lathrus latifolius* or *odoratus* variety of pea will produce a bloom until August, and it should be followed by some later blooming vine, clematis or possibly nasturtium.

Scarlet runner bean flowers from July to frost if sowed by the first of May. It is very easy to grow, reaches a height of ten to twelve feet, and likes plenty of sunlight. The flowers hang in bright, scarlet racemes and are exceedingly showy.

The trumpet creeper, *Tecoma radicans,* will only flower where the sunlight reaches, but there are now many beautiful varieties and it seems to attract those interesting visitors, the humming birds.

If there is an entrance arbor on the porch or trellis work at the entrance, some of these vines may be well draped over it. Wistaria in this situation is exceedingly attractive. Clematis combined with the climbing roses is also effective. The best sorts for this situation are those flowering early: Lady Gay, single pink; Dorothy Perkins, single pink; Crimson Rambler, double red; Yellow Rambler, double, and White Rambler, double.

For pergolas and for columns there should be some substantial support of wood or of wire about the columns. Nothing is quite as effective as the delicate Virgin's Bower clematis (*C. Virginiana*), draped about the uprights. In this situation and over the tops of arbor and trellis wistaria, grapes, trumpet creeper, Virginia creeper, Dutch honeysuckle, clematis *Henryi,* the large flowering clematis, are effective. Two other plants worth using are *Vitis vulpina,* frost grape, a tall climbing variety, and *Vitis labrusca,* fox grape, with large, furry leaves and reddish wood. Fruit grapes may often well be used in this situation, but do better when trained along rows of parallel wires.

For covering objects and for screening, all the fast-growing vines such as kudzu, honeysuckle, hop, may be used, but in addition the various types of gourd make an interesting cover with their attractive



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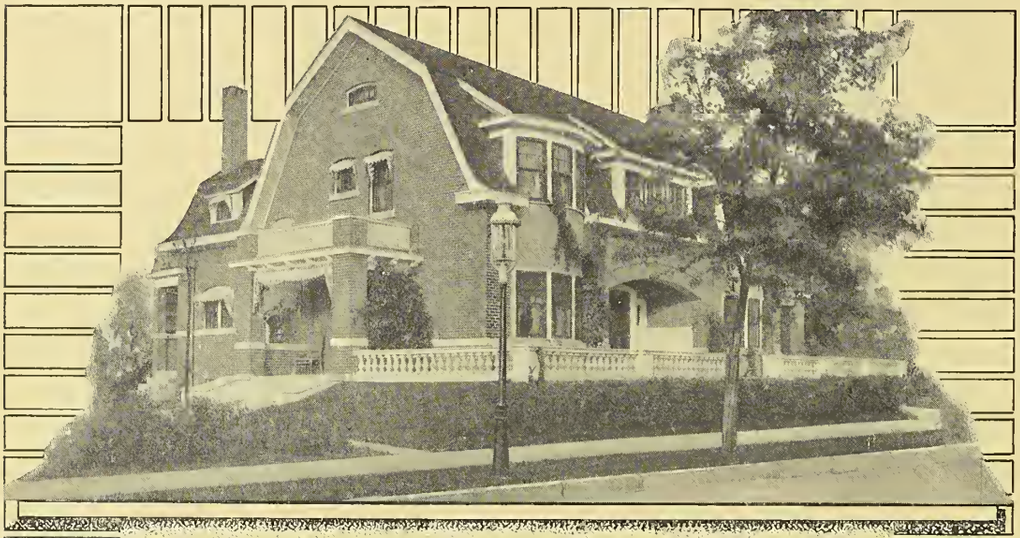
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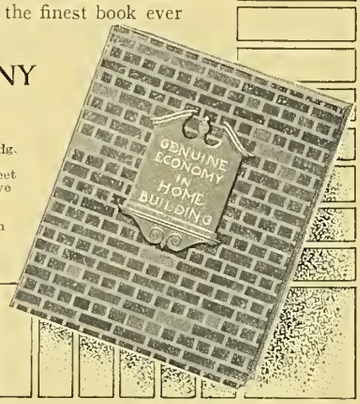
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fruits of different sizes, grotesque shapes and peculiar markings.

When making provision for fall beauty the Virgin's Bower should be considered for its feathery fruit. *Ampelopsis heterophylla* is a handsome vine well adapted for rocks or walls, but appreciated for its blue berries. Another attractive berried vine is *Celastins scandens*, a twining vine with very showy fruits of orange yellow splitting open and showing crimson seed envelopes like the bittersweet berry.



Purchasing Garden Equipment

(*Continued from page 295*)

strument with the handle instead of the long-handled hoe without a terminal grip. The spading fork, if there is a choice between the two, is of greater value all round than the spade. Get a four-pronged type, with slightly incurving prongs, and see that the iron is solidly fixed to the handle.

The rake is constantly in use as giving the final touches to the seed bed and making that carefully cultivated surface that is essential to good growth, so smooth and fine that even a cat's foot-print is left upon it. You must get a good, serviceable type. The bow-headed rake is best.

During the process of cultivation, and in fact during the whole year, the ordinary draw hoe will be a necessary item. See that you get one with a tight head with the iron running well up the shaft and the angle between the shaft and the blade a little less than a right angle. There are various sorts of hoes for breaking up clods and all the many general uses of the garden. There is the hoe with a shorter blade for lighter and quicker work in loosening up soil or cutting out weeds. There is the heart-shaped hoe or Warren hoe, well adapted to the seeding process. With a little acquired knack you can make the drill for the seed and cover it up with great facility in using this type. The scarifier comes in handily in scraping off weeds or breaking up the soil when about closely, and there are good uses for all these types, especially if you do not have some form of the mechanical wheel-hoe. Another instrument that is of value in the small garden and sometimes may precede the hoe proper is what is known as the prong hoe. At one side is a straight bladed hoe and at the other prongs. This tool combines some qualities of the rake, and is particularly good for working in around plants, loosening the surface and earlier in preparing the soil for seeding.

In setting out plants and flowers in the small garden the trowel is a necessity and any good type will do. Its work is seconded by a hand fork that bears the same relation to it that the spading fork does to the spade. Like tools of value in this connection are the various types of hand weeders. There is one particular type with a bent blade that has a strap for the fingers and that can work its way into

odd corners and leave the fingers free to assist in the work.

For the woman who gardens and for anyone whose activities are concerned chiefly with a flower garden, a garden basket equipped with tools is a help. There are compartments for various articles and as one works one's way about the garden each tool is handy and the basket can carry flowers that have been clipped without mussing them up at all. One good type of basket has two forms of trowel, a good serviceable knife, a good pair of pruning shears, flower clippers, a hammer, a spool of wire and a wire clipper. The wire is especially valuable in training vines and supporting bent down shrubs and plants; and the hammer included in this basket comes in handily in nailing trellises and vine strings and doing a thousand and one odd jobs. The pruning-shears are a vital necessity to every garden, and where there are trees on the place a pruner on a shaft to reach branches on a fruit tree comes in as a valuable auxiliary.

As plants mature the question of spraying is of paramount importance, and it is necessary to have an efficient sprayer. That type of compressed air sprayer with a galvanized can will do with one of the improved nozzles. It saves much time and trouble and is thoroughly efficient. A few strokes of the plunger fills the can with compressed air that makes spraying possible for quite a few minutes.

There is something to say about the lawn and its special requirements. The old joke of the suburban itinerant lawn-mower does not offer such a bad suggestion. To those whose places are adjacent it is a rather good economy to get a common lawn-mower of the better type. A horse roller with a set of detachable blades or else a motor mower can do all the work on a number of places along one street, or in one district; and if the expense of such a machine is shared, there will be really quite a saving in time and effort where there are extensive lawns. The horse or automobile motor is essential when there is a great expanse of lawn to be kept smooth and close cropped. If your place is large enough it will be an economy for you to get such an one yourself. At any rate, even on the small place, a hand mower of a good ball bearing type with a receiver to catch the clippings should be included. As was suggested with the lawn-mower the same idea might be carried out with the roller. The roller is quite essential to the good appearance of the lawn, and nowadays the sorts come which may be filled with water or with sand so that the roller may be moved easily and when filled be as heavy as desired. If you do not have the horse type of lawn mower which includes a roller, the roller possibly will be found necessary. Where there are tennis courts, bowling greens or grounds for games, such a roller is necessary to the equipment.

Just for the sake of suggestion, let us take a small place as typical and outline what equipment would be necessary to



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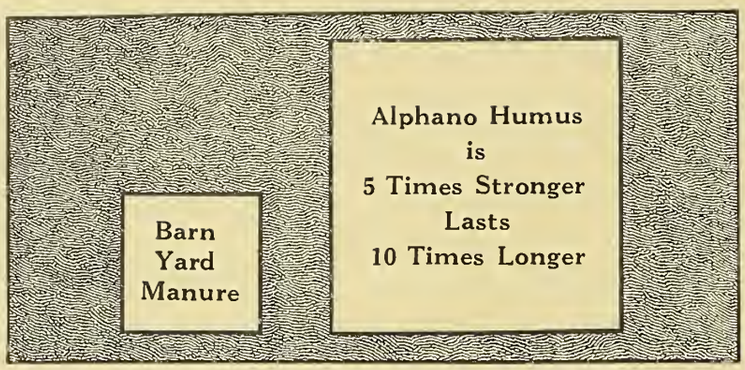
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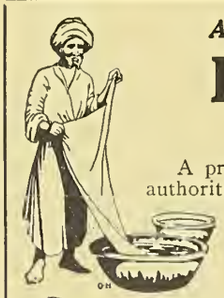
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These are the essentials. As not all the people desire a clipped lawn these things are mentioned separately.

A good lawn-mower	$8.50 to $9.50
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A medium-sized horse drawn grass-clipper will be $65.00.

When the tools are bought in the basket as suggested the expense will be less.



Spring in the Garden

(*Continued from page* 269)

were not aware of it till one July morning when it poked up above the sill. A few days later, when we came down to breakfast, there it was abloom, nodding in at the open window!

Another spring excitement in the garden is the pea planting, both the sweet pea and what our country folk sometimes call "eatin' pea." No rivalry is so keen as that between pea growers. My neighbors and I struggle for supremacy in sweet peas at the flower show in July, and great glory goes to him who gets the first mess of green peas on his table. We have tried sweet pea sowing in the fall, and it does not work. So now I prepare a trench in October, partially fill it with manure, and cover it with leaves, which I remove at the first hint of warm weather in March. The earth piles on either side thaw out quickly, and I get an early sowing, putting in as many varieties as I can afford (my wife says twice as many as I can afford), jealously guarding the secret of their number. The vegetable peas are planted later, usually about the first or second day of April, as soon as the top soil of the garden can be worked with a fork, and long before the plowing. We put in first a row of Daniel O'Rourke's, not because they are good for much, but because they will beat any other variety we have discovered by two days at least. Then we put in a row of a better standard early variety. How we watch those rows for the first sprouts! How we coddle and cultivate them! How eagerly we inspect our neighbors' rows, trying to appear nonchalant! And doubtless how silly this sounds to anyone who is not a gardener! Last summer we got our first mess of peas on June twenty-first, and after eating a handful we rushed to the telephone, and were about to ring, when somebody called us. "Hello," we said into the receiver. A voice on the other end of the wire, curiously choked

and munchy, cried, "We are eating our first peas! My mouth's full of 'em now!"

"That's nothing," we answered, "we've got our first mouthful all swallowed."

"Well, anyhow," said our disappointed neighbor, "I called up first! Goodby."

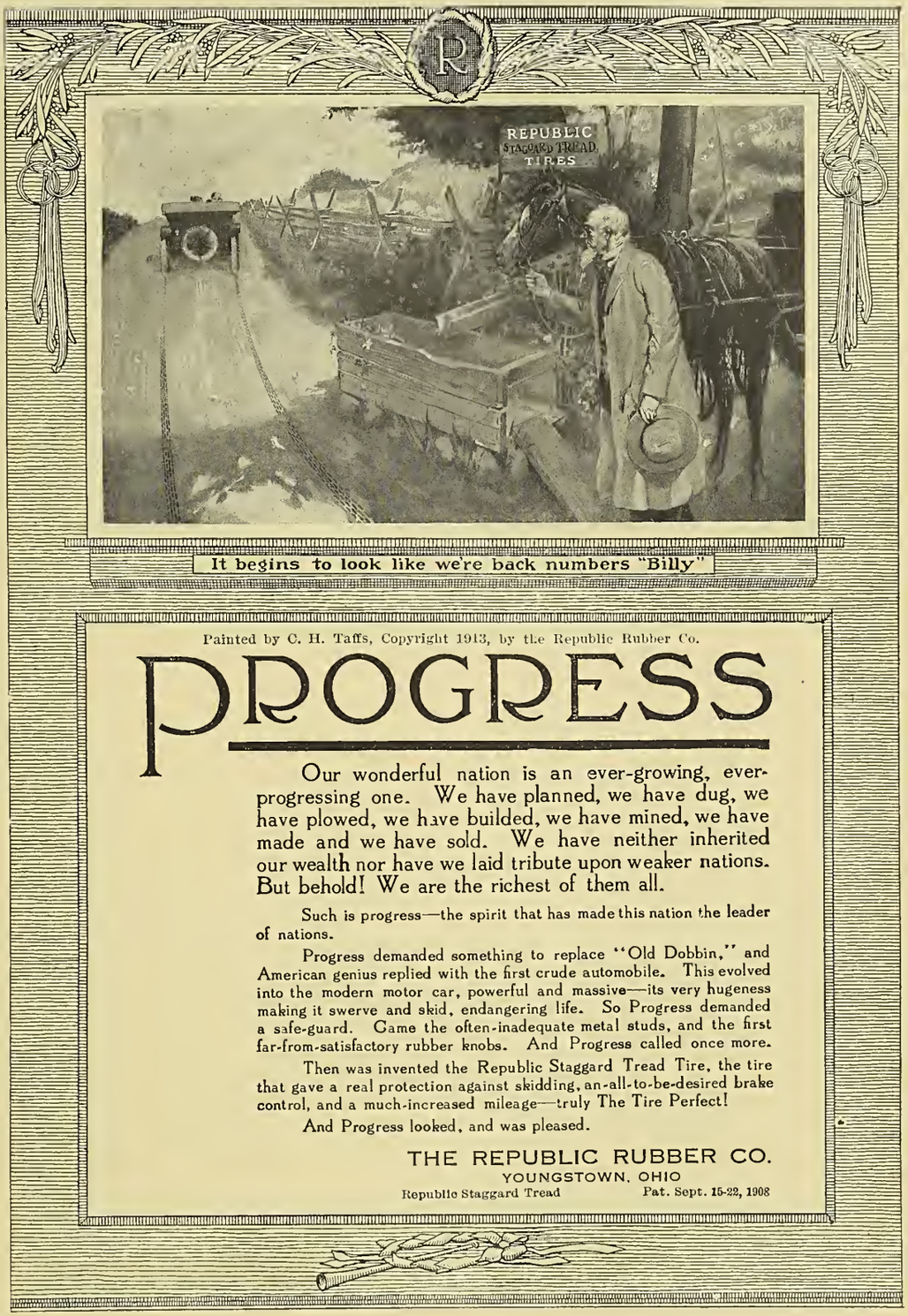
How is that for a neck-and-neck finish at the tape?

As April waxes into May, the garden beds are a perpetual adventure in the expected, each morning bringing some new revelation of old friends come back, and as you dig deep and prepare the beds for the annuals, or spade manure around the perennials, or set your last year's plantings of hollyhocks, larkspur, foxgloves and campanulas into their places, you move tenderly amid the aspiring red stalks of the peonies, the Jason's crop of green iris spears, the leaves of tulips and narcissus and daffodils, the fresh green of tiny Sweet William plants clustered round the mother plant like a brood of chicks around the hen. You must be at setting them into borders, too, or putting the surplus into flats and then telephoning your less fortunate friends. One of the joys of a garden is in giving away your extra plants and seedlings.

One morning the asparagus bed, already brown again after the April showers have driven the salt into the ground, is pricked with short tips. That is a luscious sight! Inch by inch they push up, and thick and fast they come at last, and more and more and more. My diary shows me that we ate our first bunch last year on May ninth. On that day, also, I learn from the same source, the daffodils were out, the Darwin tulips were budding, and we spent the afternoon burning caterpillars' nests in the orchard—one spring crop which is never welcome, and never winter-killed! At this date, too, we are hard at work spraying, and sowing the annuals out-of-doors in the seed beds, and planting corn (the potatoes are all in by now), immediately following the plowing, which was delayed till the first of May by a belated snowstorm. Winter with us is like a clumsy person who tries over and over to make his exit from a room but does not know how to accomplish it. It is a busy time, for no sooner are the annuals planted, and the vegetables, than some of the seedlings from the hotbeds have to be set out (such as early cosmos), and the perennial beds already have begun to bloom, and require cultivation and admiration, and the flowers in the wild garden—hepaticas and trilliums and bloodroot and violets—are crying to be noticed, and, confound it all, here is the lawn getting rank under the influence of its spring dressing, and demands to be mowed! Yes, and we forgot to get the mower sharpened before we put it away in the fall.

"May fifteenth"—it is my diary for 1911—"apple blossoms showing pink, and the rhubarb leaves peeping over the tops of their barrels this morning, like Ali Baba and the forty thieves."

Well, well, straight, juicy red stalks the length of a barrel, fit for a pie and the



It begins to look like we're back numbers "Billy"

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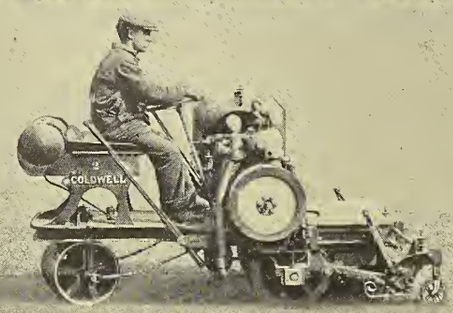
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market! It is our second commercial product, the asparagus slightly preceding it. The garden is getting into shape now, indeed; the wheel-hoe is traveling up and down the green rows; the hotbed glasses are entirely removed by day; and the early cauliflower plants are put into the open ground at the first promise of a shower. The annuals are up in the seed beds; the pool has been cleaned and filled, the gold fish are once more swimming in it, the Cape Cod water lily, brought from its winter quarters in the dark cellar, has begun to make a leaf, and we have begun to hope that maybe *this* year it will also make a blossom, for we are nothing in mid-May if not optimistic.

The earlier Darwins are already in bloom. The German irises follow rapidly. June comes, and we work amid the splendors of the Japanese irises and the flame-line of Oriental poppies, setting the annuals into their beds, from the tender, droopy schyzanthus plants to the various asters and the now sturdy snapdragons. The color scheme had been carefully planned last winter, and is as cheerfully disregarded now, as some new inspiration strikes us, such as a border of purple asters against salvia, with white dahlias behind—a strip of daring fall color which would delight the soul of Gari Melcher, which delighted me—and which my wife said was horrible.

So spring comes and goes in the garden, busy and beautiful, ceaseless work and ceaseless wonder. But there is a moment in its passage, as yet unmentioned, which I have kept for the close because to me it is the subtle climax of the resurrection season. It comes in April for us, sometimes earlier, sometimes later. The twenty-seventh was the date last year. The time is evening, always evening, just after supper, when a frail memory of sunset still lingers in the west and the air is warm. I go out hatless upon the veranda, thinking of other things, and suddenly I am aware of the song of the frogs! There are laughing voices in the street, the tinkle of a far-off piano, the pleasant sounds of village life come outdoors with the return of spring; and buoying up, permeating these other sounds comes the ceaseless, shrill chorus of the frogs, seemingly from out of the air and distance, beating in waves on the ear. Why this first frog chorus so thrills me I cannot explain, nor what dim memories it wakes. But the peace of it steals over all my senses, and I walk down into the dusk and seclusion of my garden, amid the sweet odors of new earth and growing things, where the song comes up to me from the distant meadow making the garden close sweeter still, the air yet more warm and fragrant, the promise of spring more magical. The garden then is very intimate and dear, it brings me into closer touch with the awakening earth about me, and all the years I dwelt a prisoner in cities are but as the shadow of a dream.

Pheasant Raising

IT is only within recent years that pheasant rearing has been regarded seriously in this country. As early as the beginning of the Nineteenth Century a son-in-law of Benjamin Franklin imported a few birds and made an effort to establish them on his private estate on the Delaware. They did not survive the first winter, and various attempts made during succeeding years to import stock for private preserves met with the same sort of failure until the year 1880, when a successful importation was liberated in Oregon. These birds immediately throve and increased until thousands of them were thoroughly established in the State.

To meet the growing demand for breeding stock many pheasantries were established in Oregon, and numerous importations of stock were made from the Old World in an effort to improve the quality.

Other States began to establish pheasantries and conduct experiments, through their game officials, private owners of parks and game preserves liberated stock on their land until thousands of birds were scattered throughout the country. Early in the nineties, Oregon was shipping thousands of pheasants to market in a single month.

All this has, of course, been the work of State officials or private game officials and large estates. Recently the work has been taken up by boys and girls as a fad or a means of making money at home. Several women have taken it up as a means of livelihood, rearing the birds in confinement and selling their stock, for the most part as breeders, and the eggs for hatching. In a few localities they are trying to rear them as market birds. This latter branch of the industry is bound to increase as the native stock becomes more hardy from generations of acclimated ancestry.

The varieties best adapted to the United States, for commercial purposes, are the English pheasant, the ringneck and English ringneck. The latter is a cross between the two former.

Autumn is the best time to purchase stock, as they should have a chance to become accustomed to their new surroundings before mating time, which occurs in February, usually. It is better to start with mature stock than with eggs, because you will have many eggs with which to experiment the first year, whereas if you bought eggs you would lose all, if you had bad luck with your first setting. If you buy eggs, order them in late winter to be shipped on notice later in spring, when you have a hen ready to take them.

There are many reputable dealers in the United States from whom you may obtain stock. The prices will vary according to the quality of bird you desire. The English ringneck is the cheapest of all, and good stock may be obtained at from $5 a pair up. The pure-bred English and ringnecks will cost from eight to ten dollars a pair and upwards, according to breeding. The fancy varieties which are kept largely for ornament cost about twice as much and

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Panama-Pacific-International Exposition, San Francisco, 1915



Vista from Mt. Washburn Road—The Pine Clad Summits and Beautiful Hayden Valley, Yellowstone Park

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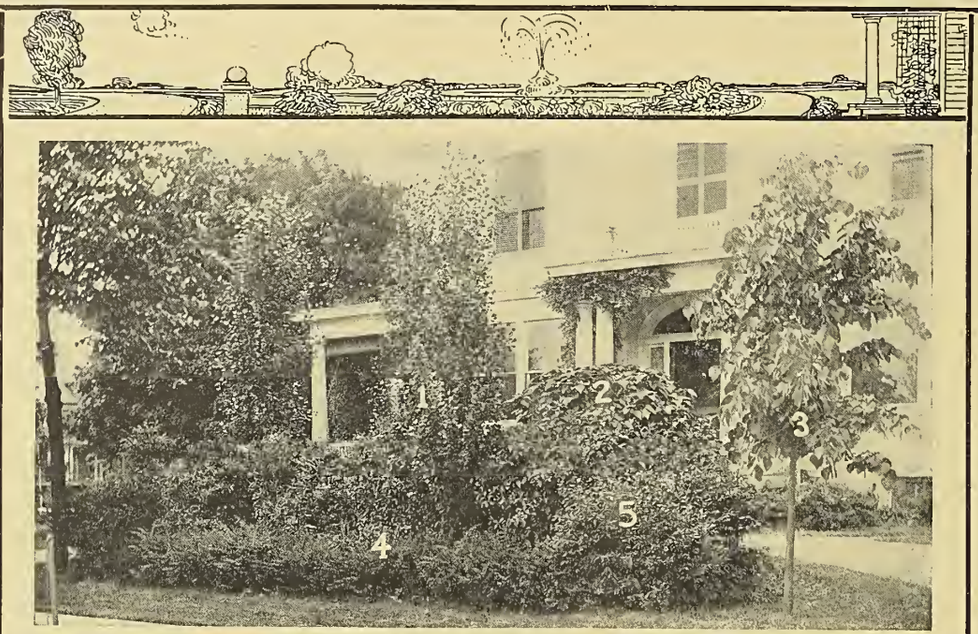
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in many cases $200 is paid for a single pair.

You will have your pen and shed ready before the birds arrive, with plenty of food and water to last the first few days. When birds arrive, place the crate inside the pen at night, leaving one side open, and keep away from the pen absolutely the next two days. The birds will find their way out into the pen, one by one, and settle down to peaceful occupancy in a few days.

Any well-drained, sandy loam will be suitable for your pens. There should be grass and some low shrubbery to provide shade and privacy, for the birds are semi-wild in disposition. The pens are constructed of ordinary poultry netting, at least six feet high and covered over the top to prevent the birds flying over. This top wire should be stretched rather loosely to prevent the birds injuring themselves, when they fly violently upward, which they have a habit of doing when frightened.

The pen should occupy at least a ten by twelve foot plot of ground, the larger the better.

No elaborate coop or expensive house is needed. The birds, themselves, naturally prefer living in the open, but a low, open shed is usually provided for shelter in storms and to afford a dry dusting place. This shed may have a canvas curtain for the front to be used in stormy weather, and should have a raised earth floor which is renewed twice a year with clean dirt. Perches should be supplied in the shed and also outside, a low, drooping shrub or dense vine affording an ideal shelter for the birds in the open.

The run as well as the house should be kept scrupulously clean, for filth is particularly fatal to pheasants. It is well, where practicable, to have two runs, to be occupied alternately, while the grass in the unused one is allowed to grow and the ground to freshen.

Where no shrubs or low plants are growing in your pen to start with, you must supply cover in the shape of evergreen boughs, or brush covered with quick-growing vines. Small evergreens make the best permanent covers, but currant bushes or grape vines will serve admirably.

Do not neglect to provide a sand pile with plenty of sharp grit in it.

The pheasant is not a heavy feeder, and care must be exercised not to feed too much while in confinement. One lady says she feeds, at the start, by hand, taking notice of the exact moment when they seem to feed less greedily, making note of the amount consumed up to that point. This is her standard for quantity, and is fed, thrown into the grass, twice a day. Table scraps, chopped green food, and meat food is fed in troughs once a day, at noon. Care should be exercised that no spoiled, putrid food is allowed to lie about in the pens.

Almost any edible thing may be fed to advantage, for the birds are not at all particular as to diet. All kinds of grain, table scraps, turnips, artichokes, cooked or green vegetables, weed seeds, clover, al-

falfa, onions, grass, cress and chickweed, are welcome. They require grit, oyster shell and meat scrap or animal food in some form, the same as chickens. Worms are obtained for them by buying wormy meal at the mill or grocery, keeping it damp and warm for a few days, when the worms are sifted out, fed to the birds and a new supply of worms allowed to propagate in the meal. If not enough can be obtained in this way, meat scrap must be purchased. A limited amount of house flies, caught in traps, are fed, freshly killed by drowning in the traps.

Pure, fresh water should be supplied at all times.

The birds naturally breed from February to July. They should be in the pens at least a month before breeding season arrives. They are polygamous, each pen containing from three to six hens to one cock. If you desire to keep more females, an extra cock or two may be kept, but they should not all be allowed in the pen at one time, for they are terrible fighters during breeding season. Better results, as to fertility, are obtained where the extra cocks are kept in separate enclosures and allowed with the hens on alternate weeks.

No nest is required, but a little assistance may be given in providing suitable places for them to choose their nest. The eggs should be picked up twice a day, packed in sawdust, bran or dry grain, turned every day, and kept in an even temperature until ready to be set.

Eggs should be hatched under chicken hens unless you have a sufficient number to warrant the use of an incubator. Pheasant hens do not make quiet sitters when in confinement. If incubators are used, there should be a sufficient number of chickens set at the same time to provide mothers for the little pheasants.

The hens, which should be free from roup, lice and scaley leg, should be provided with a dry, roomy coop, the same as for chicks. The little ones are allowed to run free, after a few days, the hen being confined to her coop. The brooding ground should be mowed short before the coops are placed thereon. It may be a grassy corner of the orchard, the back lawn or a piece of meadow land not too far removed from the dwelling.

Each hen may successfully care for from twenty to thirty chicks, according to the time of year and the climate.

The first thirty-six hours after hatching the chicks are absorbing the yolk and completing the development of their digestive system and should be allowed no feed during this period. Some fine sand and fresh, crisp grass are placed before them first of all, followed by some fine cut, lean meat, or meal worms. Hard-boiled eggs, chopped with fresh grass, makes a good food for the first few days. A raw egg mixed with dry meal or oatmeal to a dry, crumbly mass may be given once a day at first. The eggs may be gradually discontinued during the second week and fine millet seed, cut oats, wheat and corn added to the ration. A limited amount of


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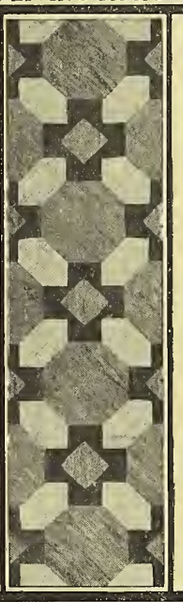
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dry curd may be given and some animal food is a necessity at all times. They get much of this themselves if the range is large. They should be fed five times a day the first few days, gradually extending the time between meals as they begin to pick up feed for themselves on the range.

There is no lack of demand for pheasants at present. Write to the game officials of your State and adjoining States, and any private preserves which you may hear of, and state the exact quantity and quality of stock you have to offer, sending photographs of birds, if you have them, asking for their best prices. You will perhaps be able to dispose of all you have to spare in that way. You may run an advertisement in poultry journals or a boys' and girls' magazine and dispose of your stock in that way. If you are rearing market birds only you will find your best market by getting orders direct from some nearby large hotel, shipping according to orders from the manager. Be sure to crate stock to be shipped alive so that they may not injure their beautiful plumage in transportation. Eggs are shipped exactly as are those of ordinary fowls.

Jennie E. Stewart



Color in the Flower Garden

(*Continued from page 294*)

WHITE GARDEN

ANNUALS (*continued*).

NAME.	Season.	Height.
Vinca Alba	August	18"
Verbena	June to Nov.	18"
Water lily, *Tuberosa Richardsoni*	May-Nov.	—
Tuberosa maxima	——	—
Nymphaea Gladstoniana	——	—
Nymphaea odorata gigantea	——	-
Nelumbium Shiroman	——	3'-4'
Zinnias	Summer	2'

A BLUE GARDEN

At first glance it would seem that there are fewer blue flowers than any other color; certainly they are less in evidence in the garden; but a careful search of the florists' catalogues reveals a considerable wealth of this charming color, only awaiting our pleasure to possess. To be sure, not all the colors listed as blue conform to our conception of a clear blue or a sky blue, and some discretion is needed in selecting plants which will harmonize in a garden whose note is wholly blue, but the following list will be found fairly satisfactory as a whole, while many of the plants listed are magnificent in their pure, clear tones. As far as possible, lavender tones have been avoided.

BULBS.

NAME.	Season.	Height.
Crocus, King of the Blues	April	4"
C. Pupurea	——	—
Hyacinth, Blondine	April	—
H. King of the Blues	——	—
H. Queen of the Blues	——	—
H. Chas. Dickens	——	—
H. Czar Peter	——	—
H. Grand Maitre	——	—
Early blue Roman hyacinth	——	—
Grape hyacinth	——	—

Anemone Harold	May	9″
Chionodoxa Luciliae	——	12″
Chionodoxa Sardensis	——	—
Chionodoxa Tmoulsi	——	—
Funkia coerulea	August	18″
Iris, *Siberica orientalis*	——	3′
Iris, *Germanica*	May	2′
Iris, Japanese	July	2′-3′
Scilla Siberica	April	6″

PERENNIALS.

Triteleia	May	6″
Anchusa Italica, Dropmore variety	Summer	5′-6′
Anchusa Italica, Opal	——	—
Hardy aster, Beauty of Colwall	September	4′
Sub-Coeruleus	June-July	12″
Thompsoni nana	July-Aug.	15″-18″
Ajuga Genevensis	May	Creeping
Amsonia	June	2′
Aquilegia coerulea	May-June	2′
Baptisia Ausaulis	June-July	2′
Campanula carpatica	June-Nov.	6″
grosseki	——	2′
persicifolia	June-July	2′
pyramidalis	——	4′-6′
rapunculoides	——	3′-4′
rotundifolia	June-Aug.	18″
Clematis Davidiana	Aug.-Sept.	2′-3′
Delphinium belladonna	June-Frost	2′
Chinense	——	—
Duke of Connaught	——	—
Julia	——	—
Lamartin	——	—
Catananche	June-Aug.	2′
Eupatorium coelestinum	Aug.-Frost	18″-24″
Houstonia serpyllifolia	April-May	Creeping
Lindelofia longifolia	May	2′
Linum perrene	All summer	18″
Myosotis Alpestris, robusta grandiflora	Spring	12″
Myosotis palustris semperflorens	All summer	—
Platycodon	July-Aug.	2′-3′
Plumbago	Sum. & Fall	6″
Stokesia cyanea alba	July-Oct.	18″-2′

PERENNIALS.

Polemonium reptans	May-June	12″
Richardsoni	June-July	—
Salvia azurea	Aug.-Sept.	2′-3′
S. Pitcheri	——	—
S. pratensis	June-Sept.	—
Scutellaria coelestina	July-Aug.	—
Macrantha	——	—
Scabiosa Japonica	July-Sept.	2′
Sisyrinchium Bermudianum	Spring	10″
Stokesia cyanea	July-Oct.	2′
Veronica spicata	July-Sept.	18″
Water lilies, *Nymphæa Zanzibariensis*	July frost	—
Nymphæa Capensis	——	—
Nymphæa Grossherzog Ernst Ludwig	All summer	—

SHRUBS.

Amorpha canescens	June	6′-7′
Amorpha fruticosa	June	6′-7′
Amorpha Montana	June	4′-6′
Caryopteris	All summer	3′-4′
Althaea coerulea	Aug.-Oct.	8′
Syringa, Pres. Grevy	May	8′
Vitex agnus castus	Late sum.	Small tree
Paulownia	May	—

ANNUALS.

Ageratum, Cope's Pet	Summer	8″
Blue Perfection	——	—
Aster, Azure Blue	August	2½′
Peony Fld., Lt. Blue	——	1½′
Victoria, Light Blue	——	18″
Browallia in variety	All summer	18″
Cornflowers in variety	All summer	18″
Convolvulus minor tricolor	Summer	1′
Annual larkspur, dark blue	——	18″
sky blue	——	—
Linum perrene	——	—
Myosotis in variety	Summer	1′
Nemophilla	——	18″
Nigella, Miss Jekyll	——	1′
Pansy, Adonis	——	1′
Emperor William	——	—
Torenia	——	—

VINES.

Wistaria Sinensis	May-June	—
Clematis Jackmani	June	—
Japanese morning glory	Summer	—
Blue moonflower	——	—
Maurandia, giant blue	——	4′

THE YELLOW GARDEN

Is especially rich in material, and the following list by no means exhausts the supply of available plants.

BULBS.

NAME.	SEASON.	HEIGHT.
Crocus, Cloth of Gold	Mar & Apr.	4″
Crocus, Mammoth Yellow	Mar & Apr.	4″
Eranthis hyemalis	April-May	4″
Hyacinth, Ida	May	9″
Hyacinth, King of the Yellows	May	9″
Hyacinth, Odalisque	May	9″
Hyacinth, Yellow Hammer	May	9″
Tulip, Canary Bird	April	10″
Tulip, Chr solora	April	10″
Tulip, Ophir d'Or	April	10″
Tulip, Pottebakker	April	12″
Tulip, *Gesneriana lutea*	May	20″
Tulip, Orange Globe	May	26″
Tulip, Parisian yellow	May	28″
Double Tulip, Courenne d'Or	May	10″

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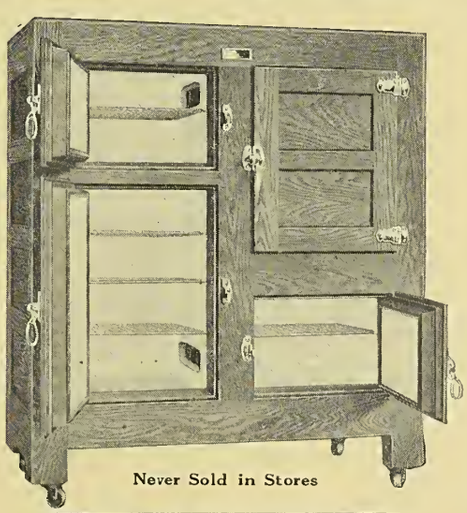
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Double Tulip, Tournesol yellow	May	8″
Double Tulip, Yellow Rose	May	10″
Narcissus, Emperor	May	12″
Narcissus, Golden Spur	May	12″
Narcissus Maximus	May	12″
Narcissus, Trumpet Major	May	12″
Jonquille, Campernelle	May	12″
Ionquille rugulosus	May	12″

PERENNIALS.

Anthemis tinctoria	Summer	15″
Alyssum saxatile	June-July	Trailing
Aquilegja chrysantha	May-June	2′
Anclepis tuberosa	July-Aug.	2′
Asphodelus luteus	July	3′
Cactus, *Opuntia arenaria*	Summer	—
Physacanthus Major	Summer	—
Physacanthus Rafinisque	Summer	—
Caltha palustris	May	1′
Caltha palustris, fl. pl.	May	1′
Centaurea macrocephala	July-Aug.	3½′
Centaurea orientalis	August	2½′
Centaurea Ruthenica	Aug.	2½′
Cephalaria	July-Aug.	6′
Cassia	July-Aug.	3′-4′
Chamelirium	June	2′
Chrysanthemums, Baby, Bohemia, Flora, Eagle d'Or, Golden Fleece, Overbrook, Sir Michael	Sept.-Oct.	2′
Coreopsis	July	2′
Digitalis ambigua	July-Aug.	4′-6′
Epimedium sulphurum	July-Aug.	—
Euphorbia polychroma	Spring	2′
Geum Heldrichi	Sum. & Fall	18″
Helianthus in variety	Sum. & Fall	—
Heliopsis	——	—
Hemerocallis flava	June-July	2½′
Hollyhock, double yellow	June-July	6′
Iris, Pseudo acorus	May	2′
Montbretia, *Cocus miflora*	June-Aug.	18″
Primula Veris superba	May	9″
Primula vulgaris	May	9″
Ranunculus, fl. pl.	May-June	1′
Rudbeckia, Golden Glow	July-Sept.	5′-6′
Rudbeckia maxima	June-Sept.	5′-6′
Rudbeckia miteda	Aug.-Oct.	5′-6′
Solidago in variety	July-Oct.	18″-5′
Thermopsis	June-July	3′
Trollius Europaeus	May-Aug.	2′-2½′
Trollius Caucasicus	May-Aug.	2′-2½′
Tritoma odalisque	July-Aug.	3½′-4′
Tufted Pansies, *Lutea splendens*	All Sum.	6″
Water Lily, *Nymphæa Marliacea chromatella*	All Sum.	—

SHRUBS AND FLOWERING TREES.

Caragana	Late Spring	10′-12′
Caragana chamlagu	April-May	3′-4′
Chionanthus	Ear. Spring	—
Cyrtisus scoparius	May	—
Eleagnus angustifolia	——	—
Forsythia suspensa	Ear. Spring	8′
Forsythia fortunei	Ear. Spring	8′
Forsythia viridissima	Ear. Spring	8′
Hamamelis	Oct.	10′-15′
Hypericum, in variety	Summer	1′-5′
Jasmine	Ear. Spring	—
Kerria Japonica	Spr. & Sum.	4′-6′
Kolreuteria paniculata	——	—
Laburnum vulgare	Late Spring	6′-8′
Lonicera fragrantissima	Spring	6′-8′
Lonicera Morrowi	Spring	4′-6′
Potentilla fruticosa	All Sum.	—
Ribes aureum	Ear. Spring	5′-8′
Roses in variety	——	—
Spartium Junceum	——	4′-6′
Ulex Europaeus	Spr. & Fall	—

VINES.

Celastrum scandens	June	—
Jasminum nudiflorum	——	—
Bignonia Hunteri	Summer	—
Honeysuckle, Yellow Trumpet	All Season	—

THE RED GARDEN

BULBS.

NAME.	SEASON.	HEIGHT.
Anemone, L'eclair	May	1′
Anemone, single scarlet	May	1′
Brodiaea coccinea	June-July	18″
Hyacinth, Gen. Peterson	May	1′
Hyacinth, Gertrude	May	1′
Hyacinth, Rives des Belges	May	—
Ixia crateroides	May	1′
Incarvillea	July	18″
Lilium Siberica	June	1′
Lilium elegans incomparabile	July	2′-2½′
Lilium Krameri	June	2″
Lilium speciosum melpomene	July	2′
Tulip, La Reve	May	15″
Tulip, *Gesneriana spathulata*	May	28″
Tulip, Glory	May	24″
Tulip, Othelo	May	24″
Tulip, Pride of Haarlem	May	24″
Tulip, Duke of York	May	9″
Tulip, Imperator Rubrum	May	8″
Tulip, Salvator Rosa	May	7″
Gladiolus, princeps	July-Aug.	2½′
Gladiolus, Cardinal	July-Aug.	2½′
Gladiolus, Geo. Paul	July-Aug.	2½′
Gladiolus, Falconer	July-Aug.	2½′
Gladiolus, Jessie	July-Aug.	2½′
Gladiolus, Eugene Scribe	July-Aug.	3′

PERENNIALS.

Aetheopappus pulcheromus	July	2′-3′
Anemone, *Japonica Kriemhild*	Sept.-Oct.	18″
Anemone, *rubra*	Sept.-Oct.	18″
Anemone, Prince Henry	Sept.-Oct.	18″



This splendid oak stands on the estate of the late Julius E. French, at Wickliffe, O. It was entirely hollow at the base, because of the decay of several years. It was physically weak and growing weaker. Within a short time a heavy wind would surely have blown it over. It was treated by the Davey Tree Experts and **has been saved.**

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Anemone, Alice	Sept.-Oct.	18″
Cactus, Echinocactus	Summer	—
Cactus, Simpsoni	Summer	—
Aethionema	May-Aug.	18″
Armeria *maritima splendens*	All Sum.	8″
Callirhoe *involucrata*	All Sum.	Trailer
Chelone Lyonii	June	4′
Chrysanthemum, King Phillip	Sept.-Nov.	2′
Chrysanthemum, Victor	Sept.-Nov.	2′
Chrysanthemum, Strathmeath	Sept.-Nov.	2′
Chrysanthemum, Queen of Bulgaria	Sept.-Nov.	2′
Dianthus, *Latifolius atrocoecineus*	June to Fall	1′
Dodecatheon	Spring	—
Geum coccineum	Sum.-Fall	9″
Heuchera sanguinea	Summer	18″
Heuchera rosea	Summer	18″
Hollyhock	Summer	4′-6′
Incorvillea grandiflora	Summer	18″
Lychnis chalcidonica	June-July	2′
Lychnis chalcedonica fl.pl.	June-July	2′
Lythrum	July-Sept.	3′-4′
Monorda didyma	Aug.	2′-3′
Monarda rosea	Aug.	2′-3′
Monarda splendens	Aug.	2′-3′
Peony in var.	June	2′-3′
Pentstemon	June-Aug.	18″
Phlox, Bechant, Geo. A. Strollin, P. Struthers, Siebold	June-Oct.	2′-3′
Pinks, Comet, Homer, Marian, Souv. de Salle	May-June	1′
Potentilla Moabiana	June-Aug.	18″
Potentilla sanguinea	June-Aug.	18″
Potentilla Vulcan	June-Aug.	18″
Pyrethrum, Alfred	June	18″
Poppy, Oriental	June	18″
Rehmania	June	5′-6′
Saponaria oxynoides	Summer	9″
Saxifraga orbicularis	Spring	1″
Saxifraga splendens	Spring	1″
Silene Schafta	July-Oct.	4″-6″
Silene asteris grandiflora	July-Aug.	3′
Tritoma	Sept.	2′-3′
Valerian	June-July	18″
Water lily, *Nymphaea gloriosa*	All Sum.	—
Nymphaea lucida	——	—
Nymphaea James Gurney	——	—
Nymphaea marliacea ignea	——	—
Nymphaea Wm. Falconer	——	—
Nelumbium, Osiris	July-Frost	3′-4′
Nelumbium Parkinensis rubrum	July-Frost	2′-4′

SHRUBS AND FLOWERING TREES.

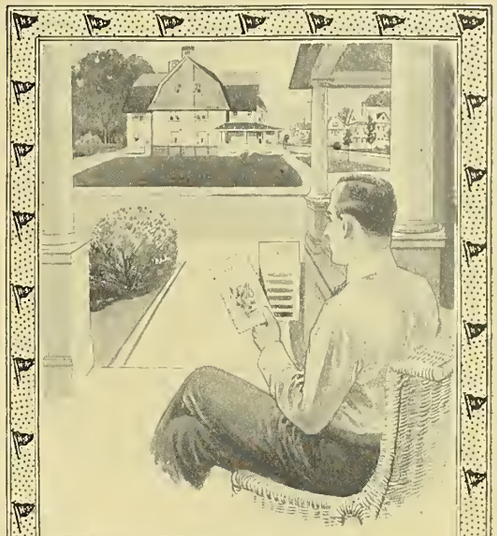
Aesculus rubicunda	June	Tree
Azalea lutea	May	2′-4′
Azalea nudiflora	May	2′-4′
Azalea vaseyi	May	—
Cornus Florida	May	Tree
Craetagus monogyna pouli	May	Tree
Craetagus punica	May	Tree
Weigela rosea	May	4′-6′
Weigela, Eva Rathke	All Sum.	2′-4′
Erica cornea, stricta, vagans	May	—
Kalmia angustifolia	June	—
Lonicera Periclymenum Belgica	All Sum.	Vine
Lonicera malus floribunda f. Porkensi	——	—
Robinia hispida	Early Spr.	2′-3′
Roses in var.	Summer	—
Spiraea, Anthony Waterer	July-Fall	2′-3′

ANNUALS.

Abronia	Summer	Trailer
Althaea, Duchesse de Brabrant	Aug.-Oct.	12′
Aster, late branching, etc.	Sept.	2′
Aster, Crimson King	Sept.	2′
Balsam, camellia-flowered	Summer	18″
Bellis perennis	All Sum.	6″
Candytuft, carmine	At intervals	1′
Carnations, Marguerite, bright rose	All Sum.	2′
Centaurea, brilliant rose	June	2′
Cornflower, rose	Summer	18″
Convolvulus minor	All Sum.	1′
Cuphea	All Sum.	—
Cosmos	Sept.-Frost	4′-6′
Dahlias in var.	July-Frost	4′-5′
Dianthus, fireball	All Sum.	15″
Dianthus, Lucifer	All Sum.	15″
Dianthus, Crimson Ball	All Sum.	15″
Dianthus, Vesuvius	All Sum.	15″
Gaillardia amblyoden	All Sum.	18″
Godetia, gloriosa	All Sum.	18″
Godetia, brilliant	All Sum.	—
Hollyhock	June-Aug.	4′-6′
Impatiens, Sultana	Summer	2′
Larkspur, lustrous carmine	Summer	2′
Lychnis	July	2′
Nasturtiums	July-Frost	Trailers
Nicotiana Sanderea	Aug.-Frost	2′-4′
Petunias	All Sum.	Trailers
Phlox Drummondi	All Sum.	9″
Portulacca	All Sum.	Prostrate
Scabiosa	June-Frost	2′
Sweet Peas	June-Sept.	3′-5′
Stock, La France	July	2′
Stock, blood red	July	2′
Vinca rosea	Aug. On	2′
Zinnia	All Sum.	1′-2′

VINES.

Lophospermum	July-Frost	10′
Clematis, Madam Edward Andre	May-June	6′-8′
Clematis, Montana rubrum	April-May	15′-20′
Clematis, coccinea	June-Frost	—
Clematis, Ville de Lyon	——	—
Honeysuckle, coral	Sum. & Fall	—
Japanese morning glory	All Sum.	20′



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Knowing the Flowers by Name

EVERY little while you hear this remark: "I never can remember the names of flowers." Change "can" to "do" and it would be nearer to the truth. Many do not remember the names of flowers; that is lamentably apparent; but anyone can remember them if sufficiently interested. It is only a question of training the mind, consciously or unconsciously.

The memory will be helped a great deal if the striking similarity of the rules of naming flowers and civilized human beings is grasped clearly. In the botanical world the natural orders are divided into genera. Each genus, or family, has a name, which corresponds exactly to the surname of a man or woman. Only the generic name always comes first, a plan which has much in its favor. A genus, in turn, is divided into species. This necessitates a Christian name, so to speak; in botany it is called specific. Usually there is only one specific name; but, as with the human race, there may be another that is still more specific. Thus, to make the correspondence clearer:

Order	*Genus*	*Species*
Cruciferae	Iberis	gibraltarica
American	Jones	Hezekiah

Latin is used for orders, genera and species, for the reason that it is the universal language of science. The order and specific names are translatable into any language; the generic name not always, as in the case of wistaria, which is coined from wistar. In the instance just mentioned the plant is Gibraltar candytuft and it belongs to the order of cross-bearers. Candytuft is doubtless a corruption of Candia tuft, as the first species cultivated (*L. umbellata*) was discovered on that island. Gibraltar implies habitat, but not a geographical restriction of range. Cross-bearers are so called because the four petals of the blossoms of plants in this order form a cross.

As plants come into cultivation, frequently in the wild state, they generally acquire a common name, which may be a literal translation or something suggested by a fancied resemblance or a mere notion. Literally *Viola tricolor* would be the tri-colored violet, but that is not its customary name; in Europe and in this country the plant has numerous popular names. So the correspondence may be carried still farther by the statement that flowers, as well as human beings, frequently have nicknames—sometimes strikingly appropriate and again quite unfathomable as to the one reason therefor.

If only the correspondence had stopped right there. But flower names change; by force, not volition. Some one says to *Bignonia radicans*, "Here, you; from this time on your name will be *Tecoma radicans* and don't mind what So-and-so says to the contrary. Understand?" Or to *Geum coccineum*, "A mistake was made at your christening, it seems. You are not *G. coccineum* but *G. chiloense.*" So in looking over the pages of the floral directory you occasionally have reason to

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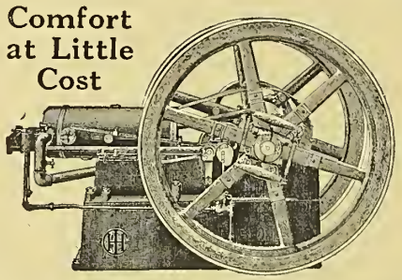
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31 East 17th St., New York City.

wish that some variety had been let alone. Fortunately the confusion is only here and there.

The common names are most important to remember, provided that they are either the best possible rendering into the vernacular or, if fancifully descriptive, are sufficiently distinctive. Dog rose (*Rosa canina*), in the one class, and Chinese lantern plant (*Physalis Francheti*), in the other, are sufficiently definite. London pride is not, nor is bluebell; the former is *Saxifraga umbrosa* in England and *Lychnis chalcedonica* here, while the latter is applied to more than one plant on each side of the Atlantic. Jerusalem cross is really a much better common name for the lychnis, as each blossom suggests the red cross of the crusader.

It is well to inquire into the reason of every common name. The result is generally to create in the mind an association between the name and the plant. Moreover the inquiry leads one into a very pleasant field of folk lore study, as well as greater intimacy with the garden. Look at a blossom of any aconitum on the plant and it is apparent from the shape of it why it is called monkshood and helmet flower. Pluck it, when fully open, and hold it with the back of the helmet down and it will be no less apparent that the little boys and girls of seventy years ago did not overstrain their imagination when they spoke of it as Pharaoh's chariot. It is just as well to know all these names; also that the best is aconite, because it is an English rendering of the generic name, *aconitum*.

Learn all the common names that you can, for the pleasurable side of it, but hold to the best for ordinary use. Choose white rock cress (*Arabis albida*), for example, in preference to welcome-home-husband-be-he-ever-so-drunk; and prince's feather (*Polygonum orientale*) to kiss-me-over-the-garden-gate. Not that these names are so foolish as they might seem at first glance. The arabis—also one of the stonecrops (*Sedum album*), which appears to have been given the same name—has a mass of white blossoms well calculated to enable a man to locate his doorstep at night and as for the knotweed it hangs its deep rose plumes over a gate in a most inviting way.

Having associated the common name with the plant, try to associate the botanical name with both. Such things, for example, as finding out that true bellflowers have the generic name of campanula (little bell), that a windflower is anemone (from the Greek word for wind), that the pink is dianthus (green for Jove's flower), that any spring primrose is primula (from the Latin for first), that the finger-shaped blossoms of foxglove are the digit of digitalis, and so on. Adding specific names you get, *Campanula persicifolia* (peach-leaved bellflower), *Anemone pennsylvanica* (Pennsylvanian anemone), *Dianthus neglectus* (neglected pink), *Primula vulgaris* (common primrose) and *Digitalis purpurea* (purple foxglove).

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But for every important window—for every window that you want to "look its best"—you will find it most economical to choose the *Brenlin Unfilled* grade. For this shade is made of closely woven cloth without the "filling" that in ordinary shades so often cracks and falls out in unsightly streaks and "pin holes."

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Pair off the various worts with the respective generic names and note the close relationship in some cases—such as saponaria (soapwort), plumbago (leadwort) and pulmonaria (lungwort). Woundwort (*stachys*) has reference to the use of the woolly leaves to stop the flow of blood. Some of the other worts are more difficult; so are the banes—wolf's (*aconitum*), leopard's (*doronicum*) and flea (*erigeron* or *inula*).

Labels are always a good aid to the memory, but should be relied upon less and less for species. For varieties they will always be necessary to a certain degree, as it would be foolish, even if possible, to burden the mind beyond a reasonable limit in that direction. Keep all labels out of sight wherever the planting is decorative; if there is a reserve garden use such tags on the memory there, so far as this can be done. H. S. ADAMS

April Leaves from a Southern Garden Book

EVERY man or woman who makes a garden should keep a garden calendar or book. Mine is a small blank-book about seven by five inches—small enough to slip easily into my hand-bag, and thus to enable me to make my entries either at home or at the office. The records are written across each double page, which represents the record of a week in garden operations. It is really a log-book of my journey on the road to garden success, and, because the journeying was so rough at first, and mistakes were so frequent, the first entry on each page is one of encouragement—that of the blossoms, then the buds, the planting operations, and, lastly, notes or remarks.

When entries of planting are made, whether of seeds, or perennials, or shrubs, the situation is also noted, and, as all the first records are written with ink, a later entry in pencil is made if it is necessary to note that the work is a failure. At first there were many "n. g.'s."

The book is a complete record of what is planted, when it is done, where it is placed, how it grows, and what the ultimate result is. Experiments are noted with especial care. Perhaps it would seem an arduous task; but, systematized in this way, it really has taken only a few minutes each week, and has been worth much to me. I copy the April leaves of last year that you may see how simple and yet how valuable a record it is. The pencil notations are put in parentheses:

APRIL 1 TO 8, 1912

Blooming—Tulips, very fine; hyacinths; crocuses; daffodils; violet; pansies, very few; *Devoniensis* rose; banksia roses, east border (shade).

Azalea Indicas, white and pink. Beautiful. Northern exposure, full shade.

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The Climbing American Beauty

The most beautiful climbing, pillar or bush rose ever introduced. Hardy as an oak. Fine, dark green, healthy foliage, free from black spot or mildew. A perfect mass of bloom in June and flowering occasionally throughout the entire growing season. Roses 3 to 4 inches in diameter on single stems; color and appearance like the old American Beauty, with the same exquisite fragrance. While the old American Beauty is rarely satisfactory in the open ground, our new Climbing American Beauty has proved perfectly hardy, stands heat and drought as well as any rose in our collection and produces twenty times as many flowers as its pollen parent.

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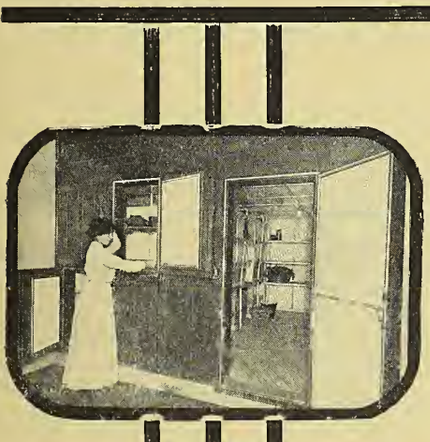
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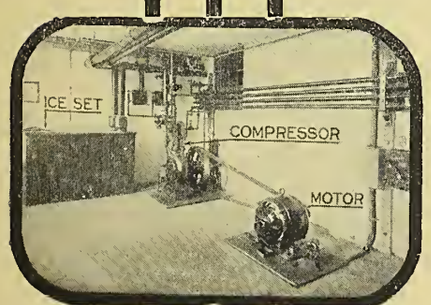
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CLOTHES LINE

A solid braided cotton cord, in which there is nothing to stain the clothes or chafe them. Lasts as long as a dozen cheap lines. 50 feet, 30 cents; 75 feet, 45 cents; 100 feet, 60 cents. Look for the name "Silver Lake" on the hank.

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Last year you had to take the second-best in your improvements because the best was beyond the reach of your designers and there were no experts in your locality.

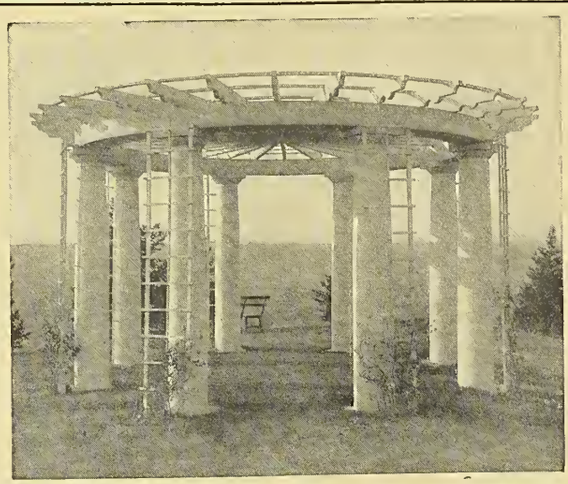
House and Garden is the advisor you need if you contemplate improvements of any kind about the house or garden. It covers the field of decoration, furnishing and gardening with authority, artistic taste and precision, and its whole purpose is to make the home more beautiful and more livable. The beauty of the magazine and its illustrations will be a pleasure for you, even if you do not plan any changes or improvements just now. Let your subscription start with April 1st, and include this helpful expert among your regular visitors.

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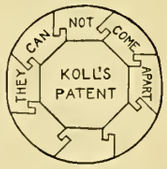
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Budding—All roses, all shrubs.
Planted—Seed of *phlox drummondi*, west border front garden, shade (n. g.).
Nasturtiums on west side of driveway, full sun (good).
Grass seed in back lawn (fine).

April 8 to 15, 1912

Blossoms—Same as last week.
Germinated—Asters and zinnias in borders; petunias in box.
Remarks—Radishes for the table.
Hyacinth and daffodil bulbs removed from porch boxes and summer ferns planted in same. House plants, ferns, palms and pines repotted.

April 15 to 22, 1912

Blossoms—*Azalea Indicas*, grand. *Philadelphus coronarius* or syringa, east border, shade. Very fine.
Forsythia or yellow mock rose, west border (shade).
Climbing rose on west side of front porch (full sun).
Pansies and tulips in all borders.
Devoniensis rose, red roses, pink roses in rose garden (full sun).
Germinated—All seed in boxes and borders.
Remarks—Radishes and lettuce to eat. Very fine.

April 22 to 30, 1912

Blossom—Pansies everywhere. Roses in full bloom in rose garden; glorious. Syringa beautiful.
Transplanted—Tomatoes and peppers into full sun of vegetable garden. Thinned out asters, zinnias and helianthus.
Perennial phlox into east and west borders front garden. Sun and shade (results excellent in both situations).
Remarks—Planted hedge of hollyhocks between front and back gardens. Full sun (although planted several weeks late they were beautiful).
Lettuce and radishes for the table.

As last year was the first time I attempted to raise pansies from seed, I made careful entries of my operations, and, tabulating these, I find the life history of my beautiful 1912 blossoms as follows:

September 15, 1911

Planted—Giant Trimardeau pansy seed of the following varieties: Adonis, light blue; Emperor William, deep blue; Fire King, mahogany and gold; Golden Gem, rich yellow; King of the Blacks; Lord Beaconsfield, blue-violet; Snow Queen, white with yellow eye; Striped, white with purple eye, yellow with dark center.
The seeds were planted in a shallow box, in well-prepared soil, the different varieties in separate rows, and kept carefully moistened and covered with glass until germination had taken place.

October 15, 1911

Pansies up. Four leaves.

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ROSES. BULBS AND ROOTS
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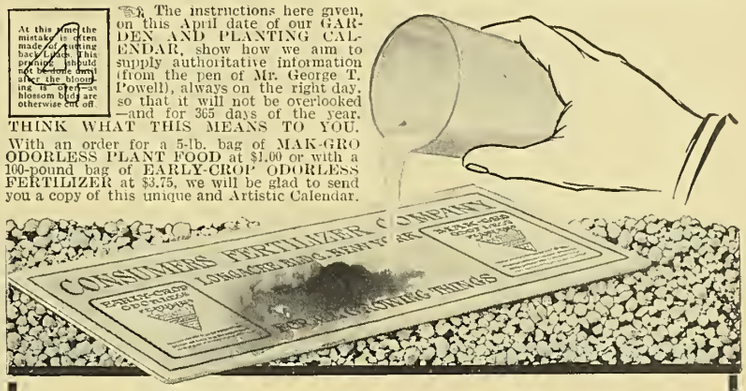
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The instructions here given, on this April date of our GARDEN AND PLANTING CALENDAR, show how we aim to supply authoritative information (from the pen of Mr. George T. Powell), always on the right day, so that it will not be overlooked—and for 365 days of the year. THINK WHAT THIS MEANS TO YOU. With an order for a 5-lb. bag of MAK-GRO ODORLESS PLANT FOOD at $1.00 or with a 100-pound bag of EARLY-CROP ODORLESS FERTILIZER at $3.75, we will be glad to send you a copy of this unique and Artistic Calendar.

Saturate part of a clean Blotter with ink—Let it dry thoroughly—Pour water on it—Notice how the dry ink re-dissolves and runs into the freshly-moistened fibers of the still clean part of the blotter. This will suggest how, in like manner, the grains of our EARLY-CROP

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(and of our MAK-GRO ODORLESS PLANT FOOD), when mixed with the soil, are acted upon by the rains and the soil-moisture, releasing from time to time from the fiber base of the compound, a quantity of immediately available Nitrogen, Phosphoric Acid and Potash, so that plants are supplied uninterruptedly throughout the entire growing season, with the food required for their proper growth and good crop-development.

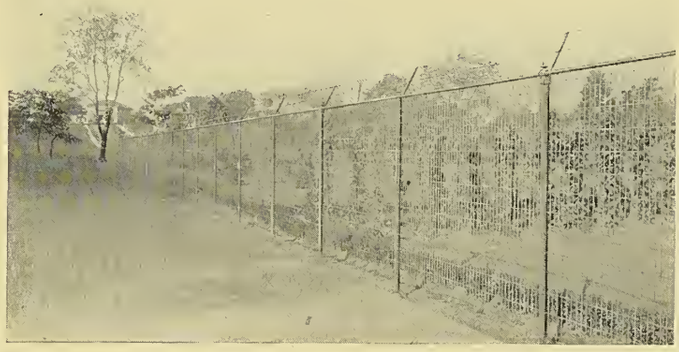
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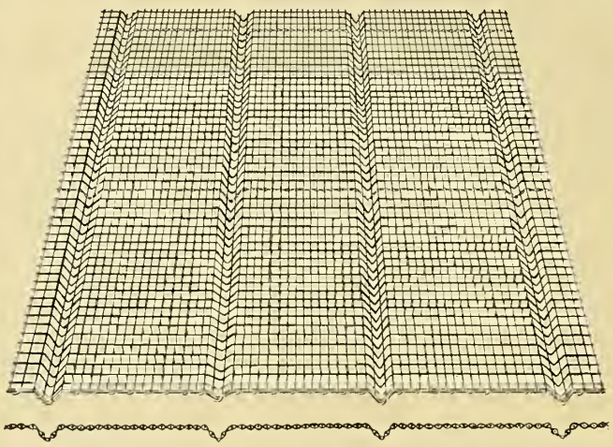
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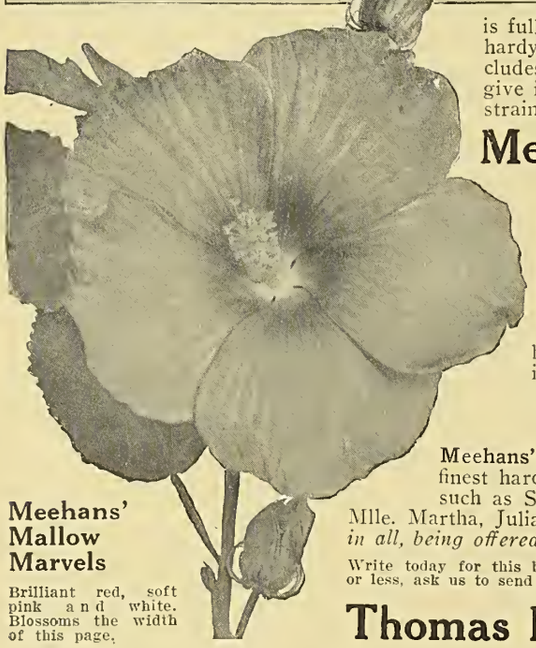
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Meehans' Mallow Marvels

Brilliant red, soft pink and white. Blossoms the width of this page.

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January 10, 1912
Pansies transplanted into sunny borders. (January 11 to 15, 1912, heaviest snowfall in the history of our city. Pansies unprotected.)

April 1 to 8, 1912
Pansies slowly coming into bloom.

April 15, 1912
Pansies blooming everywhere.

April 15 to June 15, 1912
The same entry was made, "Pansies everywhere," for eight consecutive weeks. (They were picked daily by the hundreds, and this lengthened the time of bloom.)

June 21, 1912
Pansies over. Plants thrown out.

They were planted in the borders next to the violets, which separate the flowerbeds from the lawn, and the colors were massed so that when they came into bloom the varieties were distinct. The effect was very striking and beautiful.

From the above record you will see that I have in my garden book a complete garden guide, and am enabled by its help to repeat my successes and to avoid my mistakes. I could easily multiply instances that would serve to show how this little calendar of my weekly garden progress has helped me to gain garden joy. Not the least of its pleasant features is that it makes of the garden a permanent possession; for is not memory possession? It is easy to recall the beauty and sweetness of the flowers as I turn over its almost fragrant leaves. As I read on the April pages, "Pansies everywhere," my memory gives me a glowing picture of their bright faces and rich colors in the borders, and in the bowls and vases, which not only brought joy to me, but to many, many, of my friends. I can see the rhythmic beauty of my pansy color scale, with its snowy masses of white melting into the delicate blues, which, again, darkened into the deeper tones. I remember the golden glories of the yellows blending with the rich harmonies of the mauves, turning again into violets and reds and blacks, and, whether in the garden or in the rooms, always and everywhere, fragrant and beautiful. Ten weeks of such wonderful harmony are enough garden joy to balance the mistakes and failures of a year.

"Lettuce fine," calls to my mind the long lines of delicate green that formed such a beautiful background for the pansies and such a delicious foreground for the luncheon table.

"Roses glorious," serves to emphasize the fact that roses are always wonderful and that April is essentially the month of roses in the South. Then it is that they blossom out in their full spring fragrance and beauty. White or yellow, crimson or scarlet, clearest and most dainty of pinks, or deepest and richest of reds, climbing to the tops of the tallest trees or trellises, or blooming a foot or two above the ground, wherever and whenever found, the rose is the queen of the garden beauties and best of our Southern garden friends.

Julia Lester Dillon



The "Iris Catalog" Will Help You to Know the Finest of the Flowers

This Biltmore Nursery book will make you acquainted with the new and glorious forms of the Iris. It will show you how, by judicious choice of varieties, you may have magnificent flowers from the first breath of spring until summer's arrival.

To make clear to you exactly what the choicest kinds are, in both form and color, Biltmore Nursery has reproduced seven varieties of unrivaled beauty in all the colors of nature—the rich purple, golden yellow, lavender, white and other markings and shadings are pictured with wonderful fidelity.

But the illustrations are not confined to beautiful individual flowers or clumps of them. Engravings of plantings, like the one shown above, are added to suggest landscape effects that you may duplicate at little cost. The most noteworthy varieties in every section are described in detail, making selection easy. To aid the amateur still further, an "introductory collection" is offered. This book will be sent gladly to any one who contemplates planting Iris soon. The edition is limited, so early requests are desired.

Other Books of Biltmore Nursery

Hardy Garden Flowers
The illustrations suggest many pleasing forms of hardy perennial planting, from the simple dooryard effect to the elaborate vista. The descriptions are full and complete, yet free from technical terms.

Flowering Trees and Shrubs
Many of the best of the trees and shrubs producing showy blossoms are shown from photographs, as grown in typical gardens, lawns and yards. The pictures and text give useful ideas for planting the home grounds.

Biltmore Nursery Catalog
A guide to the cultivated plants of North America, 196 large pages, fully illustrated. Cost $1 a copy to complete. Intended to help those who have large estates and contemplate planting many varieties.

Ask Us For the Book You Need

BILTMORE NURSERY, Box 1645, Biltmore, N. C.



DREER'S DIAMOND JUBILEE GARDEN BOOK

Roses for the Amateur

Two-year-old plants carried over winter in cold houses with only sufficient artificial heat to exclude severe frost; will give immediate results.

We particularly recommend the Dreer Dozen of Hardy Ever-blooming Hybrid-Tea Roses; all well-tried varieties which will produce an abundance of flowers to cut until frost.

Caroline Testout: Bright satiny rose; **Earl of Warwick:** Soft salmon-pink; **General MacArthur:** Rich crimson-scarlet; **Kaiserin Augusta Victoria:** Soft pearly-white, shaded cream; **Killarney:** Well-known, sparkling, brilliant pink; **Konigin Carola:** Satiny-rose, six to seven inches across; **Lady Ashtown:** Soft rose, shading to yellow at base; **Mme. Jules Grolez:** Attractive satiny china-rose color; **Mme. Leon Pain:** Salmony-pink, with orange shading; **Mme. Ravary:** Splendid Nankeen-yellow; **Prince De Bulgarie:** Silvery-flesh, shaded with salmon; **Viscountess Folkestone:** Creamy-pink, shading deeper at centre.

Any of the above in strong, two-year-old plants, 50c each. $5.00 for the collection of 12 varieties; $35.00 per 100.

DREER'S GARDEN BOOK For a complete list of roses of all types for garden planting, see Dreer's Diamond Jubilee Garden Book. Within its pages you will also find all the vegetables, plants, hardy flowers—everything worth growing.

Free if you mention this publication.

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FROM FLORIDA

For Southern planting outdoors and for house decoration in the North

Trade Mark

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It takes special care and preparation to properly pack delicate palms, ferns, etc., to stand a trip of thousands of miles, but we do it—not just once in a while, but a good many times every workday.

We issue a large catalog covering all our stock, having 17 special Departments; the plants and trees, etc., are all classified in these Departments, with special notes on hardiness to withstand cold, and when to transplant, and so on, so that a novice can make intelligent selections for the living-room, conservatory, orchard or garden.

We Have the Stock

in immense variety, from all over the tropics, and are constantly adding to our variety. Whenever you want a rare (or common) plant or tree merely look in our complete index in catalog, which should be on your desk or library table for ready reference, and order it by Parcel Post at catalog price, postpaid, or, if a large specimen, by Express or Freight. We ship to all our foreign colonies, Mexico, Canada, Europe and all tropical countries, as well as all parts of the United States. On receipt of your request we shall be glad to send a catalog, and we promise no follow-up literature or passing your name on to other firms.

Royal-Palm Nurseries Reasoner Bros. Proprietors **Oneco, Florida**

The New Canna

Mrs. Alfred F. Conard

HERE is the most popular pink canna ever introduced for planting singly or in beds. It's exquisite salmon-pink flowers are of the largest size, carried proudly on erect stems 4 feet high. The photograph shows Mr. Antoine Wintzer, who for 20 years has specialized on canna propagation, critically examining a canna bloom head. During the 20 years he has doubled the size of some blooms, *trebled the variety of colors*, increased the endurance of the petals, and given *bronze foliage* to flowers which before had green.

Canna, Mrs. Alfred F. Conard

PRICE—50 cents each; 6 for $2.50; 12 for $5.00; 100 for $37.50; or

7, enough for a round bed 4 ft. in diam., $3.00
37, enough for a round bed 10 ft. in diam., 15.00
19, enough for a round bed 7 ft. in diam., 8.00
ALL ABOVE PRICES PREPAID



Mr. Wintzer judging the new canna

Conard & Jones Lily-Cannas produce, from June until frost, a mass of brilliant bloom in all imaginable colors and combinations except blue. Different plants grow from 2 1-2 to 10 feet high, with large leaves and sturdy stalks, tropical in their luxuriance. Should be used freely for beds, borders, hedges and screens. Prices range from $1.00 per dozen upwards.

FREE—A Book About Cannas

The only thing of its kind, shows you just how to make the showiest flower beds that it is possible to produce, in color and size, of your own choosing. Directions are simple, results are sure. Send today for our *"Great Little Canna Book."*

Write for new Floral Guide

Describes over 75 magnificent varieties. Many are illustrated by photographs, 5 in natural colors. Some of the leaders are to be had from us only and and are shown for the first time.

It also lists and describes the 360 Best Roses for America and other garden flowers. Full instructions for selecting, planting and growing roses.

The Conard & Jones Co.
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We have been trying for years to protect you against substituted imitations of wire-grass floor coverings.

CREX—the original and genuine—now has the name woven (almost invisibly) in the side binding on the rounded edge, as shown in illustration.

Before you buy, look closely for CREX on rug or runner—it's your protection and stands for HIGHEST QUALITY.

CREX coverings are sanitary and durable—do not hold dust or dirt—are reversible and easy to keep clean.

They are suitable for all-year-round use in any home—indoors or out. Not affected by rain or dampness—they lie flat—never curl.

Most dealers carry a varied assortment. It will pay you to look at the many beautiful and artistic designs. The low prices will astonish you.

To introduce CREX in your home we are making a special size sample rug 12 x 30 inches which we will send, postage prepaid, on receipt of 35 cents in stamps or coin. State preference of color—green, red, blue or brown.

"The Story of CREX" and catalogue of numerous patterns in natural colors, mailed on request.

CREX CARPET COMPANY
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Originators of Wire-Grass Floor Coverings





P. Sarti, G. Lucchesi & Co.

IMPORTERS OF

Italian Marbles for Hall and Garden, Lines, Fountains, Sphinxes, Tables, Benches, Pedestals, Columns, Statues, Mantel Pieces, Vases, Etc.

Orders take for special designs in Plastic and Marble Reproductions

SHOWROOMS

113 East 34th St., New York

The Collector's Corner

(*Continued from page 263*)

easily answered. The ware was comparatively soft. It cracked as usual and chipped easily. Grease penetrated the glaze and stained and discolored it. Owing to their cheapness, such pieces were thrown away. Porcelain became commoner and cheaper, and the blue no longer held in such high esteem was relegated to the buttery and finally was discontinued almost entirely.

Now as to prices, and here is the rub! Even that very platter which brought $1,200 last year, if put up at auction tomorrow might not bring half that sum. When I am asked, "What is such a piece worth?" I always feel like answering, "What you can get for it." It depends on where it is sold, if somebody wants it very much, if there is rivalry at the sale, and if the person who wants it most has a long pocket. Mr. William Hearst, who bought the one I showed, wanted this platter, and got it. Probably never again will anyone want it so badly.

Not just any old platter in dark blue, even if it be marked Clews, Stevenson, Adams, Wood or any of the well-known English potters, is valuable. The "Landing of Lafayette" design has decreased in value during the last ten years, so much of it has been uncovered. The "Pittsfield Elm" has met the same fate.

But if you have pieces marked "Syntax," you might bustle about somewhat, always bearing in mind that seven of the Syntax designs have been forged! If you have any pieces with the "Arms of the States" on them you can glow with satisfaction, for even the most common one, New York, is worth over twenty dollars, while Pennsylvania almost comes up to the "New York from Brooklyn Heights." Such collector's pets as the "Battle of Bunker Hill" platter, the medallion pieces, some of the college views, portraits of Washington, Lafayette, Franklin, etc.—well, all these should be regarded with attention and examined by an expert.

The Vital Functions of Light in the Home

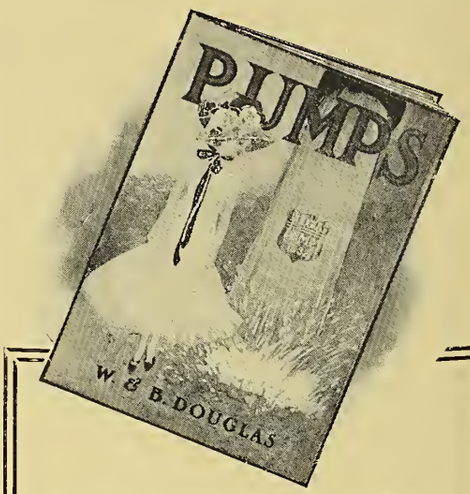
(*Continued from page 272*)

There are three types of systems supplying gas, and in addition the engine-operated electric plant. The gas generated is acetylene, gasoline and Blau-gas.

An acetylene generator is usually in two main compartments of galvanized steel, sometimes placed upon one base, sometimes two: the generator proper and the gas receiver. The gas-making material is calcium carbide, a substance produced by the electric fusion of lime and coke. This is supplied in lumps looking like pieces of crushed stone, and can be handled, shipped and stored with no more danger than if the steel can contained so many pieces of granite. If kept free from moisture it will last indefinitely.

Carbide is placed in an automatic feeder

(*Continued on page 344*)



CITY WATER CONVENIENCE AT LITTLE COST

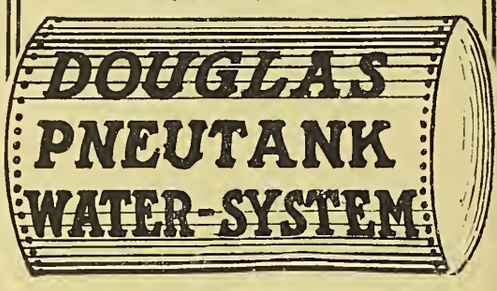
When our outfits cost so little it seems a pity not to have running water in your home. You can own your own water works and have water as convenient as the city people. Quit lugging and tugging with pails and tubs for baths and cooking.

Send a Postal for Douglas' Free Book

It will open your eyes to the low price and ease of installing in your home. The upkeep is next to nothing. The Douglas Pneutank in the cellar can't freeze. The construction is simple—nothing complicated. It is easily operated. Beats attic reservoirs and wind power towers and tanks. Everything where you can get it quick. This system will appeal to you. Write now for above booklet—a postal will bring it.

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200 William St., Middletown, Conn.

Pump-Makers for 81 Years



"Detachable" Hose Reel



Can be easily changed from one faucet to another. Put a faucet on front and rear of house, in garage, etc.

Quickly slipped on and off the faucet. Hose securely attached to reel. Easily carried about. You can unreel the hose as needed with the water turned on. Reel revolves on the faucet.

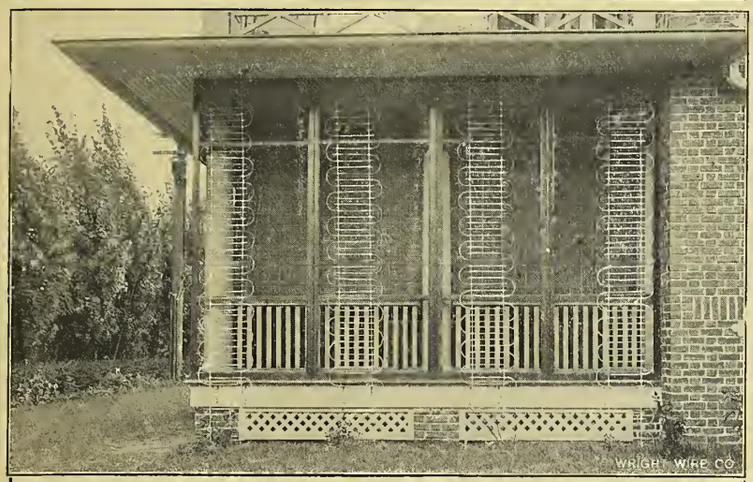
Prevents kinks and twists in the hose—makes it last longer.

Fire Protection — ready for instant use by having a special faucet in kitchen or laundry, small expense.

Ask your hardware dealer to show you or write for booklet *"Useful things for lawn."*

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VINE SUPPORTS

Start your vines on the Excelsior "Rust-Proof" Wire Trellis. As "Rust-Proof" Trellis never requires painting, it is much superior to wooden supports. The vines never need to be disturbed. In painting the house, the "Rust-Proof" Trellis can easily be detached and temporarily withdrawn without injuring the growing vines.

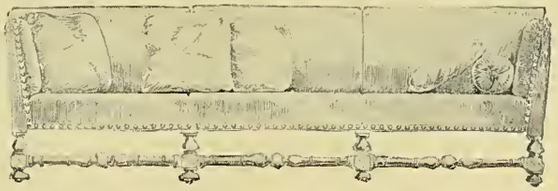
For permanency and decorative effect around your grounds, use Excelsior "Rust-Proof" Fences, Trellis, Arches, Flower and Tree Guards.

ASK YOUR HARDWARE DEALER

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Time: To-day—very much to-day—with an up-to-the-moment light on a situation never before handled in quite the same way.

Place: The oddest little island (in the Indian Ocean) that you ever didn't see—beautiful, but with a tragic corner in it.

Girl: Zalia Thorne, marooned on the island when she was twelve, and alone there for six years, when the story begins with the coming of Barry Carshall.

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Buying such paints you buy permanent tints, efficient protection, durable coatings.

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We do not make paint.
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Read About This New Astermum

THE dispute between the Aster and the Chrysanthemum has at last been most amicably settled by combining the beauties of the Aster and the glory of the Chrysanthemum.

It is now our pleasurable privilege to introduce you to the Astermum—a perfect result of the hybridizers' art. When making up your list, be sure that they receive an invite.

You will find them delightful garden guests. They have a beauty all their own. They dress most tastily in snow white, beautiful rose pink and Aunt Prue Lavender.

Each color 35c. a package—3 packages, $1.

These Astermums are fully described in Boddington's Garden Guide—which is the real "social register" among the flower and vegetable folks. Send for the Guide—it's free.



Boddington's Quality Seeds

Arthur T. Boddington

334 West 14th Street **New York City**

The Latest Word on the Conflict in the Near East

The Balkan War Drama, By CYRIL CAMPBELL

Special Correspondent of the *London Times* at the front

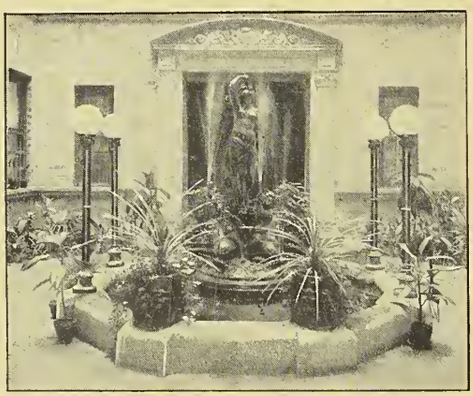
Presents a vivid and timely picture of the stirring events, but recently enacted, as they were witnessed by a keen and trained observer who was on the spot and behind the scenes. The book shows a knowledge of the diplomacy which led to the outbreak of the war, and presents the various stages of the conflict in panoramic fashion. *With 32 Illustrations.* $1.40 *net.*

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THE well designed entrance often needs a fountain to give the final touch of beauty.

Unexpected and pleasing effect in landscape gardening may be accomplished by an out-of-door ornament.

Lawn, garden and courtyard embellishments shown in catalog. Special designs planned for fitting and harmonious effects.

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Established 1828

and made to drop piece by piece into a compartment containing water. There the chemical combination results in giving off a gas that is piped to a receiving chamber and from there purified and piped into the house. The old difficulties of the original machines have now been removed. An automatic (or weight-driven clockwork motor) feed assures an even generation of gas; by ingenious arrangement the floating gas bell of the receiving tank shuts off the feed automatically when sufficient gas has been generated, or falling as gas is withdrawn, it starts the carbide feeder again. The whole process goes on without any attention whatever beyond feeding in the carbide once in three weeks or a month or in the removal of residuum sludge after a long period of operation. Modern machines are all but fool-proof. Safety devices provide the liberation into the air outside of all possible escaping gas, thereby preventing explosions. It is impossible to open various parts of certain machines without automatically stopping the generation of gas, so that only an exceedingly ingenious suicide maniac could do damage with the modern perfected generator.

Acetylene gas is a white light of much the same quality as that produced by a tungsten burner. The carbide to produce the gas costs about $3.75 per hundred pounds, and one pound generates about five cubic feet of gas, so that it will readily be seen that light is supplied at considerable economy.

Another economical and efficient system is that of generating gas from gasoline. The volatile gasoline is combined with air by means of a carburetor situated usually with the gasoline supply underground and some distance from the house. The air necessary to mix with the gasoline to produce a gas or a vapor is supplied under pressure created by some sort of power (hand, windmill or engine). The resultant gas flows back, and is regulated by a governor in the cellar so that the supply may be just proportionate to the number of burners in use. There is a steady circulation of air from the house to the carburetion chamber and back again as gas, and there is no labor necessary beyond occasionally operating the engine to compress a supply of air or once in a while replenishing the gasoline. Gas is generated only as required, and as soon as the fixtures are closed the supply of gas runs back into the container.

The appearance of the gaslight is much the same as that of ordinary illuminating gas, and its cost of manufacture, outside of the original expense of the plant, is little. It is claimed that a twenty-five candle flame can be kept burning in one burner for forty hours at a cost of five cents.

Another gas similar in appearance to illuminating gas is the Blau-gas mentioned earlier, which is supplied in steel cylinders much like those used for automobile headlights. The gas is bottled under high

(*Continued on page* 346)



Reg. U. S. Pat. Off.

Protect your metal laths in the frame of your stucco house with

Bay State Brick AND Cement Coating

Applied to the exterior cement or concrete it protects against dampness, becomes a part of the material without destroying its distinctive texture, and gives you a uniform tone of a number of beautiful tints. Can also be used as an interior tint of softest velvet tone on wood or plaster.

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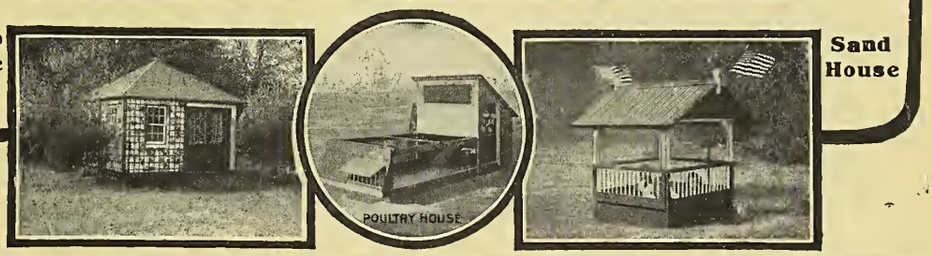
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They win birds because they're built just right. They are the result of 17 years' experience. Successfully used from Canada to the Isle of Pines by hundreds of bird lovers.

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SOBER PARAGON MAMMOTH SWEET CHESTNUT

Paxinos Orchard Crop brought $30,000

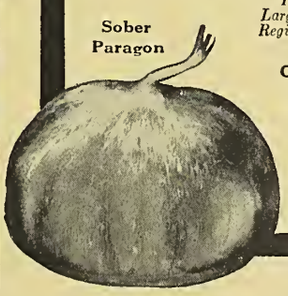
Plant for profit, for pleasure or for decoration—plant a thousand trees or a single one. A safe tree to plant in zero climates, or in hot climates. Succeeds in drought, in frost, in poor soil and upon steep hillsides—the roughest of lands.

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St. REGIS Everbearing Raspberry

Yields first season—all summer long—June to Nov. Large, sugary, crimson berries. For market growing St. Regis is so profitable it is called the "mortgage lifter."

Sober Paragon

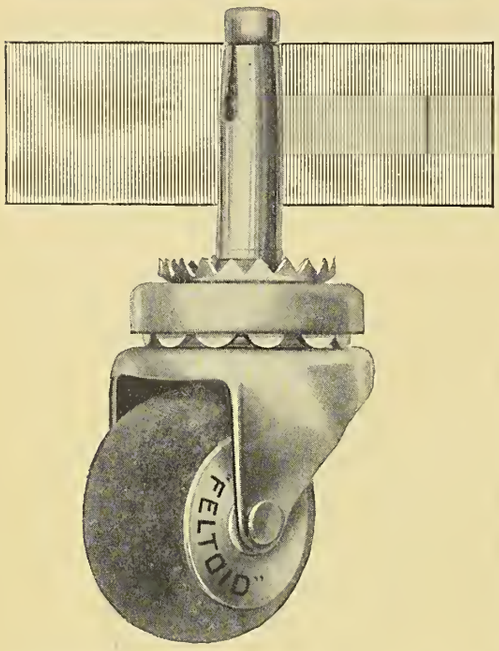




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KEEP them free from scars and mars and grooves and dents due to hard-wheel casters by using scratchless, noiseless, marless

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A special advantage for the electric system is its adaptability for power supply. The engine may be used to pump water, drive a motor or furnish the power for various uses upon the country place.

The less carefully refined gasoline—usually sixty-eight degree—is used as fuel and costs only from eight to ten cents a gallon when bought by the barrel, at which rate it is figured that the cost per sixteen-candlepower light per hour is about one-tenth of a cent. With the greater economy of the tungsten lamps this would be materially reduced. In figuring the size engine required, a ten-horsepower engine can operate one hundred sixteen-candlepower lights. Where there is less current demanded in a small cottage or bungalow a generator of but two horsepower may be procurable that will operate eight sixteen-candlepower lights for eight hours, or eleven lights for five hours.

The Hundred Per Cent Garden

(*Continued from page* 291)

sow much more thickly than the amount of space in the row required by the plants would indicate to the uninitiated. For instance, from five to twelve onion seeds to the inch are put in when sowing the usual amount to the acre, and yet the onions are wanted only two or three inches apart. Experience will show that this is the only way of making certain of full rows. Some seed will fail to germinate, some that germinate will, on account of one accident or another, fail to make plants. And fungous diseases and other enemies of your garden are sure to get a few more. So you will see that when the seedsman tells you to put five to eight squash seeds or eight to fifteen cucumber or muskmelon seeds

(*Continued on page* 348)



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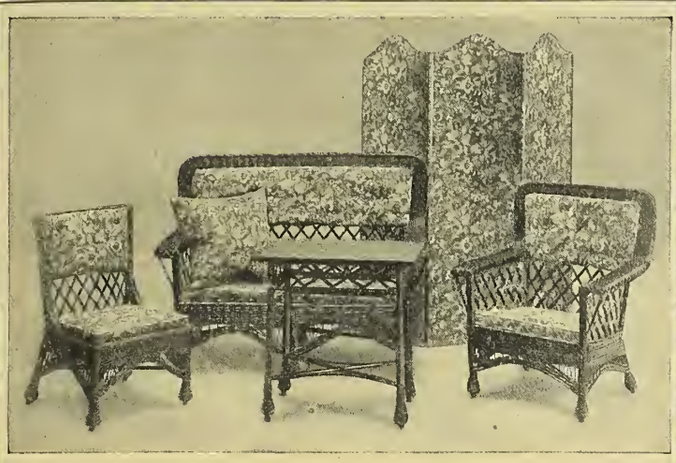


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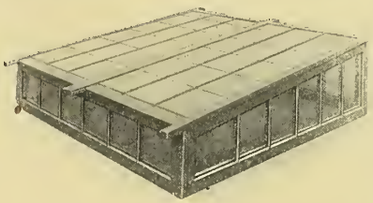
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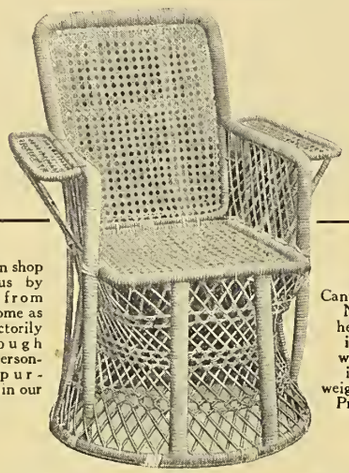


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The Largest Roller Manufacturer in the World

in a hill where you want only two or three plants, he doesn't do it in order that he may sell you more seeds, but that he may stand some chance of getting your order again next season. As in the other matters connected with planting, however, no definite set of rules can be laid down. The gardener must use his judgment and according to the quality of his seed, the condition of his soil, the favorable or unfavorable condition of the weather, with the eternal chances of injury from insects or disease, he must plant more or less seed.

With seeds that require a very long time to germinate, such as celery or parsley, where it is desirable to gain a few days' time in getting the crop started, where conditions in the open ground are unfavorable for germination, or with seed that is so scarce that you wish to make every kernel count, the method of getting the germination well under way before planting is very frequently being used with great advantage. I have, for instance, gained five days in getting sweet corn up by soaking the seed a day and a half before planting, in warm water kept in a warm place after the water had cooled. These seeds may be soaked in tepid water until they are swelled but germination has not quite taken place, then spread out and dried fairly thoroughly, a necessary process which may be hastened by rolling in land plaster. Or the germination may be carried still further along by rolling the seeds in wet newspapers—several thicknesses of old newspapers and an outer covering of old bagging—then placing the "seed-roll" thus formed in a mild heat. Take care that it does not dry out, and plant in a carefully prepared bed as soon as the seeds have sprouted. It is best to have a separate package for each kind of seed used, as some will sprout more quickly than others. You must be careful that there is not too sudden a change from the temperature in which the seed has been sprouted and that of the soil in which it is to be put.

Probably the most prolific of all causes of failure with seed is loose planting. This is for two reasons, first, because a certain amount of moisture is necessary in order to get the seed to sprout, and, secondly, because the embryo tap root breaking through its husk must, in order not to perish, issue at once into congenial surroundings. If it first strikes a miniature air space in the soil or dry, dusty earth, it is likely to die. The seed should be, therefore, so placed in the soil that the earth is pressed firmly and closely about it on all sides. The best way to do this with large seeds such as peas or beans, or even with small seeds such as turnips and winter cabbage when they are planted in very dry weather, is to make the seed firm in the bottom of the row before covering. Do this with the back of a narrow-bladed hoe or with the ball of the foot. The covering also should be made firm on the top of the

(*Continued on page* 350)

Five Practical Books For Art Lovers

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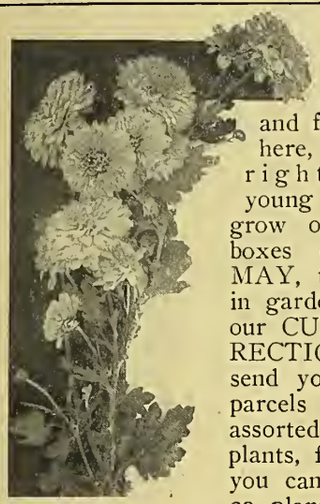
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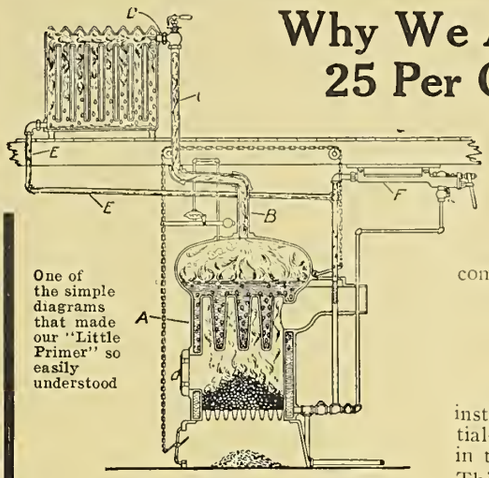
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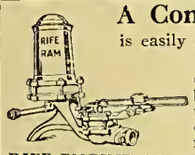
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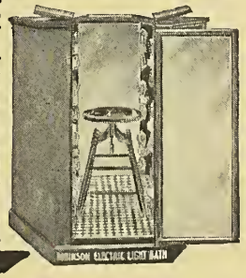
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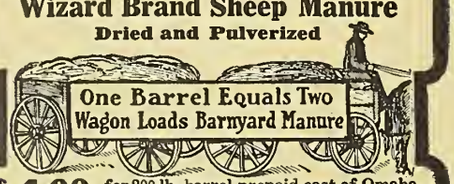
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row in the same manner, both to compact the soil and to mark the row.

It must be very obvious, even to the beginner, that the different habits of growth of the various vegetables demand different methods of planting them. A carrot occupies some four inches of space, a cabbage taking four square feet or more, and a cucumber running over the sixteen to thirty-six square feet allotted to it and then crawling over into a row of beans or up a tomato pole, necessarily require different methods of planting. Most of the root crops such as carrots, radishes, beets, turnips, etc., are planted in drills or continuous rows, where they are grown as close together as they can be without too much crowding. Most of the leaf crops, such as cabbage or lettuce, are set in rows where the plants, though put at regular intervals apart, have practically all the cultivating, as with drills, done in one direction. The vine crops, such as cucumbers, squashes, melons and most of the fruit crops, such as tomatoes and pole-beans, are planted in hills—usually at equal distances apart each way and always far enough apart to allow of cultivation in both directions.

I have taken this matter up at length because it is the most important thing which the beginner in gardening has to master and because lack of skill in this matter, given a suitably prepared soil, is, I believe, the cause of more failure and discouragement than any other one thing.

For detailed information as to the needs and requirements of each individual vegetable see the accompanying planting table on page 282.

To get early crops of such vegetables as lettuce, cabbage and beets and to get satisfactory results with such late things as late cabbage, cauliflower, celery and so forth, it is necessary to set out and to transplant plants already started.

The distance apart for the rows and for the plants in the rows for the various vegetables is given in the table on page 282. As with seed sowing, you should have a perfectly smooth and freshly prepared surface. Mark out your rows with absolute straightness, not only because it will look better but because you will find it of the greatest assistance in cultivating during the entire season.

With many of the plants that are set out in rows, unless the garden has received the heaviest kind of a dressing of rich manure, it is a very good plan to give the plants an extra quick and strong start by a "manuring in the hill." I do this very quickly and easily by marking out the rows and opening a small furrow with the plow-and-wheel-hoe attachment, marking off the cross rows, dropping the required amount of the compost to be used where each plant is to be set, and then covering it in again with the wheel-hoe, thus leaving a very small, low ridge with the earth in the best possible condition for rapid and thorough plant setting. The cross marks still left between the rows will indicate the direct point at which the plants are to be set.

(*Continued on page* 352)



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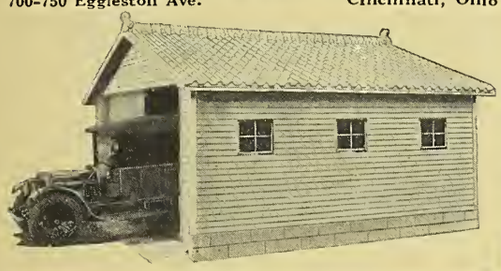
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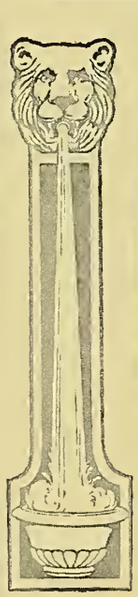


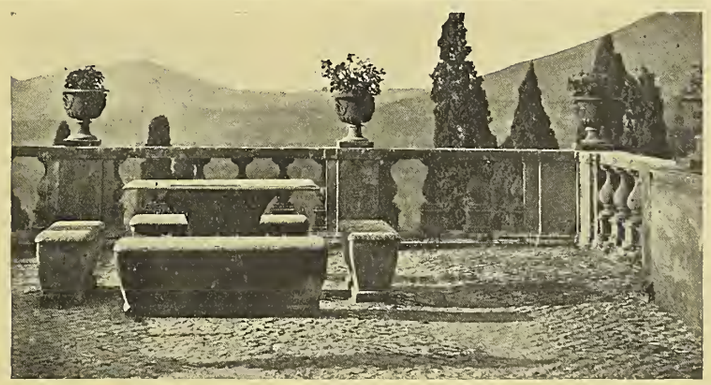
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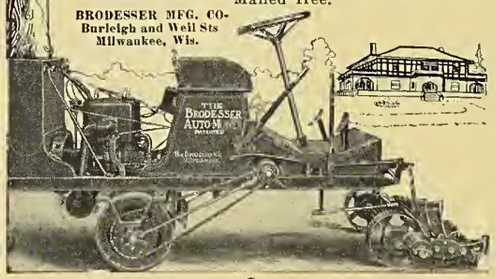
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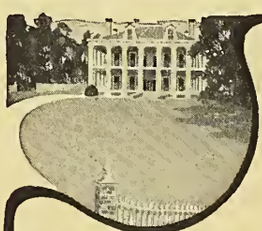
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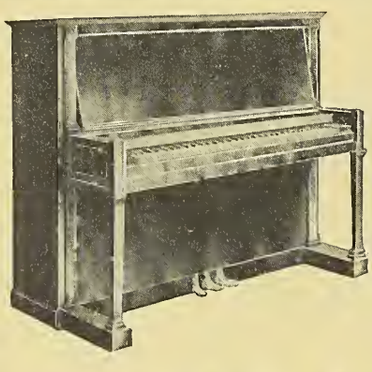
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The plants you set, whether you grow them yourself or buy them, should be thrifty, short and stocky. Tall, spindling plants are almost sure to wilt or "lop over" and be very much delayed in getting a start even if they do finally pull through. In addition to being the right size and shape they should furthermore be thoroughly hardened off by exposure to the air by night and day for several days before setting out. All the plants which may be safely set at an early time, April first to May fifteenth, belong in the hardy class and cannot be injured by a few degrees of frost after setting out, if they have been thoroughly hardened as suggested above. Last year the thermometer went down to fourteen degrees below freezing and the ground was frozen stiff every morning for several days in succession after we set out our early cabbages, but in spite of the cheerful prediction of all our neighbors that they would be absolutely lost, almost every plant came through and we had the satisfaction of having the earliest cabbages anywhere about. On the coldest mornings we watered them with cold water to give them a chance to thaw out before the direct rays of the sun struck them.

The day before you expect to plant, give all the flats in which the plants are growing a thorough soaking, so that the soil therein will be in a good moist condition, but not muddy, when you are ready to work. Furthermore, if the plants are pretty large and tall and the leaves of good size, it will pay well to trim them back about one-third, as this makes them much more convenient to handle and not so likely to wilt after setting.

Having all in readiness, and your rows marked out, take the plants out of their flats carefully, having left as good a ball of earth as possible with each one. This will be easily accomplished if the soil is in the proper condition, but if it is too dry or too wet you will have difficulties. Distribute the plants along the row or carry them at your side in a basket, in either case being careful not to take out so many that they will begin to get dry and warm at the roots before you can put them into the soil—a precaution that is especially needed if the day happens to be very bright or windy. Where it is possible, a cloudy day or late afternoon should be selected.

With the fingers, trowel or dibble make a hole big enough to take the ball of roots and earth without crowding them, and deep enough so that when the plant is set and the soil filled around it, it will be covered one-half to two-thirds the length of the stem. The taller the plant the deeper it should be set. Pack the earth firmly down upon and against the roots with the fingers and knuckles of both hands. When you are through the plant should stand up as straight and firmly as if it had been growing there. When you have finished the row go back over it and pack each plant still more firmly down into the soil, pressing the ball of the foot close to the stem on either side and bearing down with all your weight.



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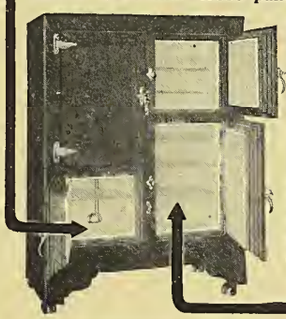
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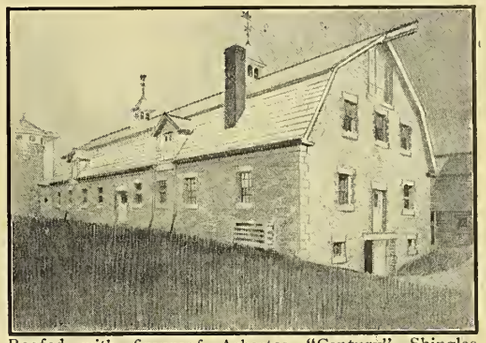
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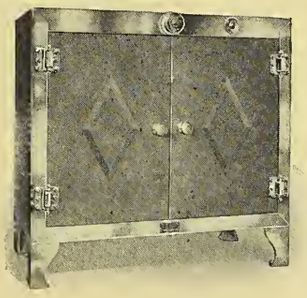


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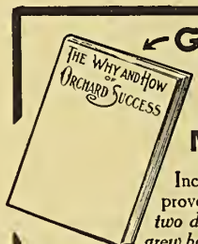


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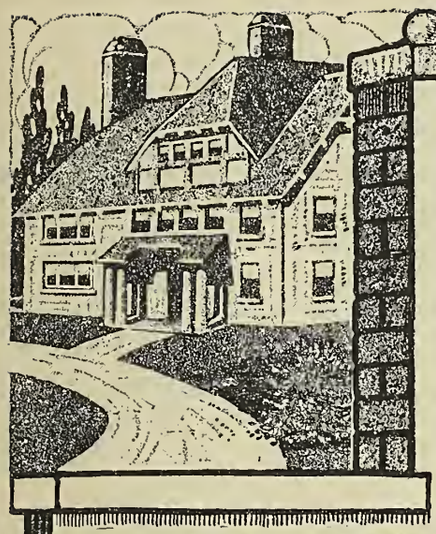
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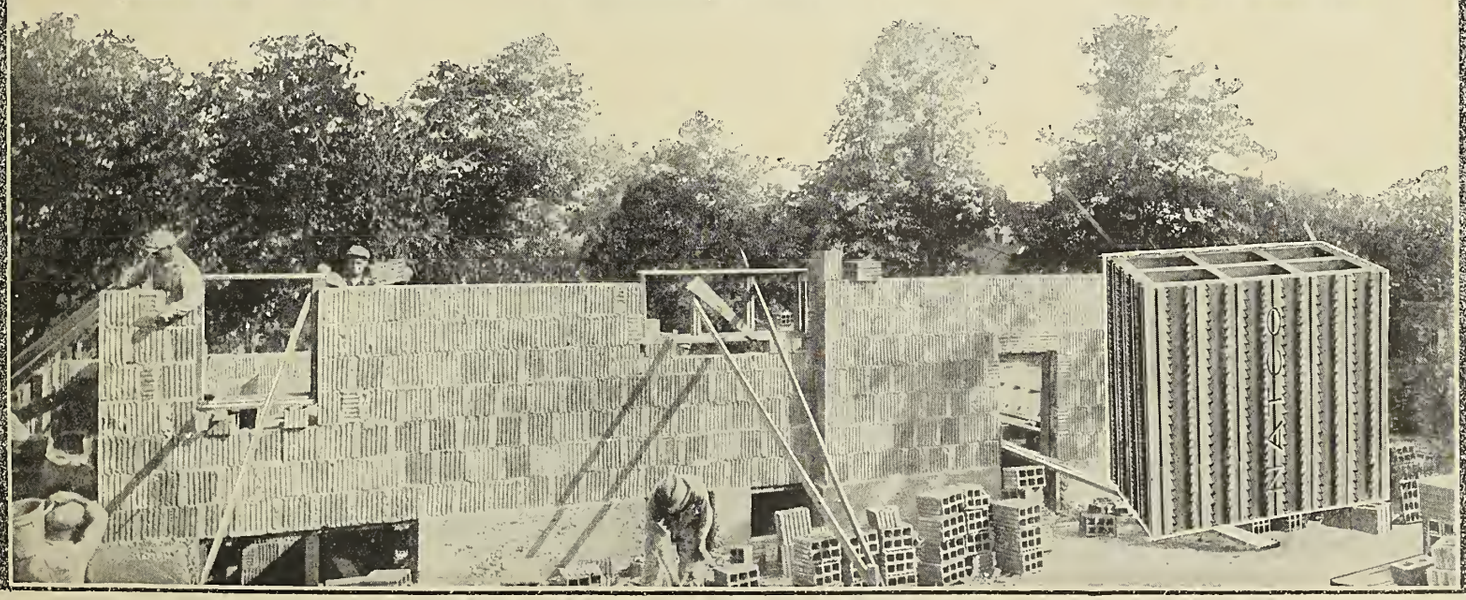
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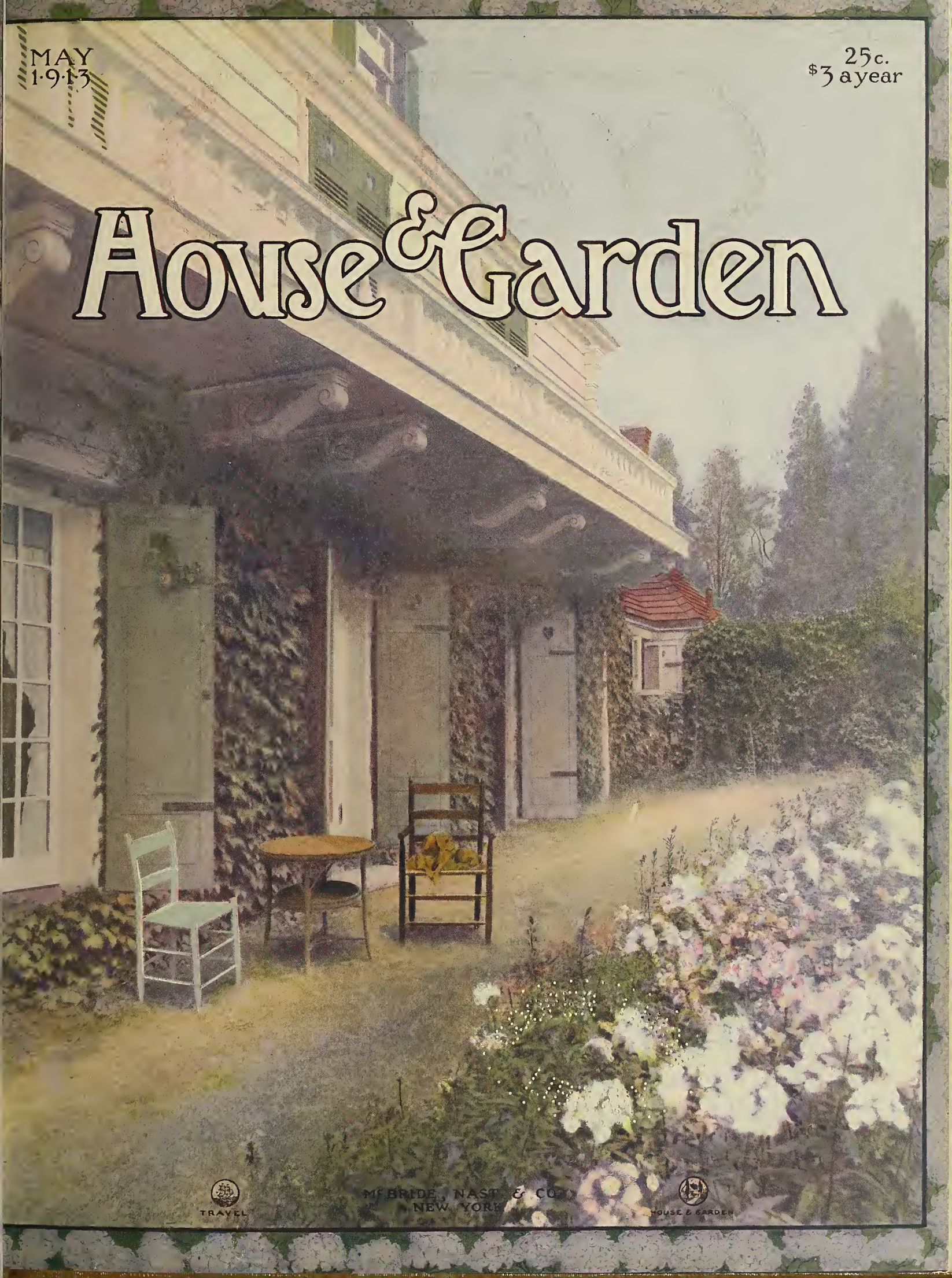
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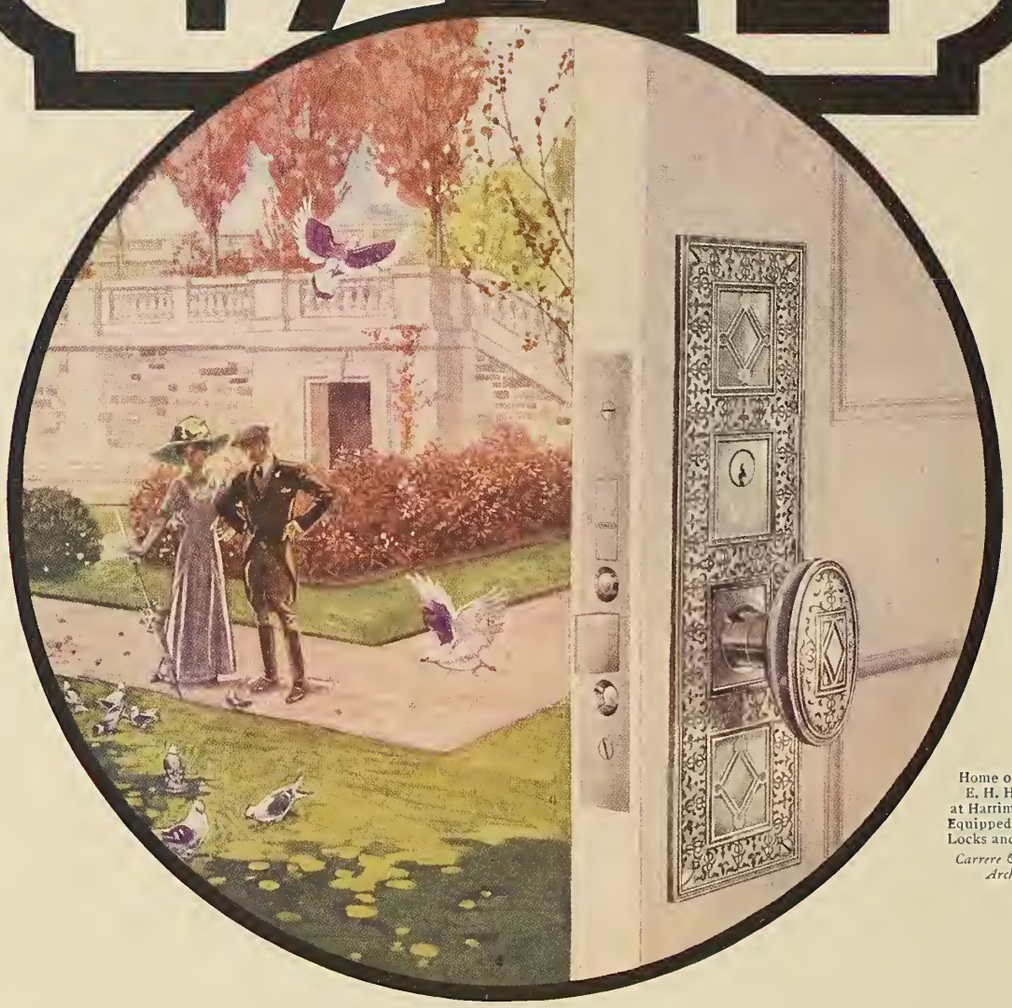


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May Blossoms in Southern Gardens

THE refreshing showers of April and the balmy skies of May bring forth such a riot of blossom in Southern gardens, fields and woods that amateur gardeners are apt to feel content to rest on their laurels. With the tall white oleanders' masses of starry blossoms, with crimson rambler roses vying with star jasmine to see which can be most beautiful, with bright-faced pansies by the hundreds in the borders, with nasturtiums rich and glowing in their places, with sweet peas delicately beautiful as orchids in the rows, with hedges of hollyhocks, stately and tall, lending their dignity of color and line to the garden picture, it is hard to realize that eternal vigilance is the price of a garden, and that May must be a busy month if summer flowers and vegetables are desired.

The violets must be looked after, first of all. No matter how luxuriantly they are growing, after the season of bloom is over every plant must be taken up, the leaves cut off, and the roots planted in permanent positions, about three inches apart. This is the only way to grow them successfully. If not separated annually they multiply so rapidly that deterioration takes place very quickly. Many do not think it necessary to cut the leaves when transplanting, and the result is unsightly, withered or dead leaves on every plant, marring the appearance of the whole garden. Planted with the leaves cut, not too closely, the strength of the plant goes to form new roots, and when the leaves begin to grow they are fresh and green, and stay so. It is a great deal of trouble to take up violets every year, separate the roots, and replant; but what do we have in life that is worth having, without working to gain it?

My violets are planted on the edge of the flower beds, separating them from the lawn. I also use them to divide the lawn from the driveway and to edge my porch boxes. They make a satisfactory evergreen border edging. Blooming from October to April, at first not very freely, coming into full beauty in December and blossoming by thousands from then until late March, I know of no flowers that so well repay a minimum amount of thought and care. If it is very cold the leaves may become yellow, but the brave little plants seem to flower more freely for the touch of winter. To southern gardeners who can plant little, and give that little indifferent care, I would say, plant a grass plot and edge it with violets.

The dahlias and gladioli should be staked at this time, and tomatoes transplanted in the latter part of April will also be ready for the stakes. Plant them in rows two feet apart. In the first row begin the planting one foot from the end and continue at intervals of two feet until the end of the row is reached. In the second row begin three feet from the end, and then plant two feet apart. If there were eight plants in the first row, there will be seven in the second, eight in the third, seven in the fourth, and so on. The gain in plant-

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ing in this way is more room to pass between rows and around the plants, and a more symmetrical effect. The plants should be staked as soon as they begin to put out suckers, which are the shoots between the leaves and the main stalk. Strips of lumber heavy enough to support the vines can be secured from the nearby lumber yards. A load of strips will be enough to stake a half dozen city gardens. They should be cut so that the stakes are six feet above the ground, at least. In tying the plants to the stakes, soft cloth cut in strips about an inch wide is the best material to use, and in tying, care should be taken that only the stems of the leaves are fastened to the stakes. This leaves the main stem tree to grow and flourish, which it does no. fail to do.

Success in tomato growing consists in keeping the suckers cut. They grow a foot over night, and must be religiously removed daily. Grown in this way, the main stalk goes up to the top of the stakes very soon, the fruit is borne in quantity, no storm is likely to beat them down, and, if the season is dry, it is not hard to keep the roots well watered. Last year, through a very wet summer, I had tomatoes daily in sufficient quantity for a large family, while gardeners who had used the ordinary low framework for supports had none.

Chrysanthemums also must be looked after in May. They, like the violets, do equally well in sun and shade, and well repay all care. They should be carefully separated, kept well watered and shaded until rooted in the new positions, and then left alone until August. By buying a dozen good plants to start with, and adding a few each year, these will so increase that the garden will be well supplied with this bravest and best of autumn flowers. If the small black lice get on them, as well as on the roses, as they so often do at this season, two or three applications of a sulpho-tobacco soap solution will rid the garden of the pests.

Rudbeckias, or golden glow, may be put out in early May, and, once planted, need only to be thinned out occasionally to keep them from covering the earth. They are desirable because they give a wealth of gay blossoms in midsummer, when flowers are scarce. They make a gorgeous yellow background for the white perennial phlox. Growing tall and having rather scraggy stems, they should always be placed at the back of the sunny border, but they will not grow in the shade.

Annuals, such as asters, zinnias, and salvias, must be placed in permanent positions this month—it ought to have been done before. The more carefully the colors are grouped, the more attractive the garden composition will be. Crimson zinnias planted back of the violets, against a background of white phlox, or white asters against scarlet salvia, make charming combinations. But I had to pull up a whole row of beautiful blue-violet asters last summer because they dared to blossom in front of the vivid coloring of the

scarlet sage. Can you imagine anything more hideous? Knowing when to remove is almost as important as when to plant; I am ruthless when false notes are struck in my garden harmony.

Salvia, used sparingly, with groups of varicolored colei scattered here and there to break the color line, is beautiful and satisfactory. With the soft greens of the lawn in front, the dark evergreens in the background, with only white flowers against its vivid masses of glowing red, the picture is all that could be desired.

JULIA LESTER DILLON

Zephyranthes—Pink and White

A ROW of small brown bulbs below the surface of the garden bed. Above, a row of slender, dark green, grass-like leaves. A month or more of spring sunshine; then, given either a warm rain or a soaking from the garden hose, and the zephyranthes buds — pink and crocus shaped — are up. No green calyx, no sheath nor covering veils their delicate color. A rapid growth of the slight, fleshy stem, and in less than a week from the first start there is a swaying row of blooms, in color a delicate, deep pink, as soft as *panne* velvet, and as perfect in texture.

Nor is that all. After a blooming time lasting nearly a week, during which the beautiful blossoms, closing at night and opening fresh each morning, slowly fade into a softer pink, then droop away; and the border looks forlorn and dry and faded and you turn the water on it again just for pity—then, a few mornings after, there is *another* row of pink heads pushing out of the ground. Again the quick growth and sudden expansion of blooms, another swaying row of beautiful flowers, and more of them than at the first blooming. All summer long this is repeated, but with fewer blossoms as the season goes. Starting with perhaps two hundred blooms at one time in a row twenty feet long and four or five inches across, the zephyranthes gradually diminish until, toward the close of the summer, there will be only a dozen blooms.

Six broad, pointed petals constitute the bloom, opening out flat when fully grown. Each blossom is single on its stem, and from three and a half to four inches across, the waxy, white pistil rising well above the bright yellow anthers. The whole forms a picture absolutely unique in color and grace.

Why are they so little known? Perhaps one reason is that they are very fragile; and while they keep well in water, yet the petals are so easily broken in handling that it is difficult to carry a bouquet to a friend. As cut flowers, therefore, the florists do not handle them, and they lack this potent means of being advertised.

The white Zephyranthes which differs from the pink variety in many ways is often called the bulb crocus, and the name is singularly appropriate.

LILLIE F. SHAW



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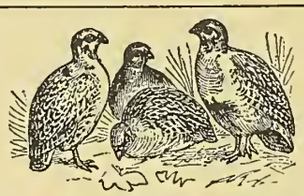
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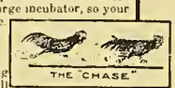
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Official Organ of the Housewives League
Supervising Editor, MRS. JULIAN HEATH,
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THE AIMS OF THIS MAGAZINE

We defined our aims in our first number. In case you did not read that number we want to repeat them, to state again our platform and give our pledge to all—alike to members and non-members—who have the interest of the home at heart. With the purposes of the League you are doubtless familiar, but we go on record here with platform and pledge as follows:

OUR PLATFORM

To organize the housewives of America for educational, constructive and defensive work for the home.

To demand and obtain fair prices for all commodities.

To bring together the producer and consumer with this object in view. To obtain clean shops. To demand and obtain pure products which are what they claim to be. In short, to work for honesty, quality, efficiency and a square deal for all. So much for our platform; now for our pledge which is as new and unique, we think, as the Magazine itself.

OUR PLEDGE

First and foremost we pledge ourselves to independence. Few magazines can make such a pledge, since their editorial policies are of necessity controlled by business interests.

Our editorial policies are under no such control. They are dictated by the National Central Council of the Housewives League and solely in the interest of the Housewives of America.

This is a vital point in our pledge, the value of which every woman will appreciate.

For the rest, *with your co-operation and support*, we pledge that the Magazine will do all in its power to make our platform an accomplished fact.

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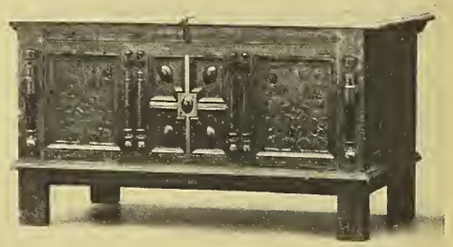
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The Collector's Corner

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Questions will be cheerfully answered by the writer of this department. Letters calling for a personal answer should contain postage for reply.

IN the entire range of domestic articles the chest undoubtedly stood first. It was easily made, it served the triple purpose of a seat by day, a bed by night, and always a repository of the family wealth, which might not be reckoned by gold or jewels, but in a more precious commodity to the struggling settlers, seed wheat. I



The chest served as seat, bed, and repository for the family wealth

find a record from Jericho, L. I., where two sisters complain that their chest had been broken open and the wheat stolen therefrom. Chests were not only of varying sizes, but they might stand flat on the ground or be raised on legs; they might be carved or painted, and, finally, they acquired drawers—one, two, or three.

The chests shown are Connecticut pattern, from the fact that so many of these chests have been found in Hartford County, Conn. The lids, backs, and bottoms of the chests are commonly of yellow pine, the front and sides of oak, and the decoration is almost identical on the different chests, the center panel showing a conventional sunflower, and the ends a pattern derived from the tulip. The split



Split balustrades and egg drops are characteristic of all Connecticut chests

balusters and egg drops are seen on all pieces, and these, as well as the moldings, are always stained black, sometimes showing traces of red, in imitation of cedar.



Are you going to be married this Spring? Do you want to know what fashions are most in favor at this moment? Have you a country home to be furnished or refurnished at a minimum of cost? Then don't try to get along this next month without Vogue.

The May 1st Vogue

NOW ON SALE

Late Spring Fashions—all the new things, big and little, evolved since the Paris openings—are given the place of honor in the current Vogue. This number has, too, a delightful flavor of brides and bridal arrangements. Here are photographs of the principal brides of this season, and little sketches of what they are wearing at the ceremony and afterward.

This Vogue makes it easy to choose and buy a trousseau—to decorate the church and the home—to buy wedding presents—to remember all the innumerable things that have to be done when a woman of fashion is married.

In the current Vogue also begins our important series of papers on good manners. Were it part of a college course, this series would be called Advanced Etiquette. The first paper discusses the early training of the woman of society—she will be expected in after years to carry on the traditions of her family and position.

The May 15th Vogue

READY MAY 9th

Be on the watch for the next Vogue—a number that tells exactly what to wear in the country. One goes in, nowadays, for extreme simplicity by day and extreme elaborateness by night. In the May 15th Vogue you will find a profusion of smart new waists, skirts, hats and tub frocks. Also riding habits, top coats and hats, boots and gloves.

It is strange how few people realize that there is a definite standard for outdoor wear. By reading the next Vogue, you will avoid the hybrid half-masculine, half-feminine outing clothes so often offered.

The next Vogue also gives plans for a very simple little country home—the kind you can safely lock up and leave from Tuesday to Friday. We will show not only the floor plans of this home, but also a pleasant variety of appropriate furniture, wallpapers and cretonnes. Watch for the next Vogue.

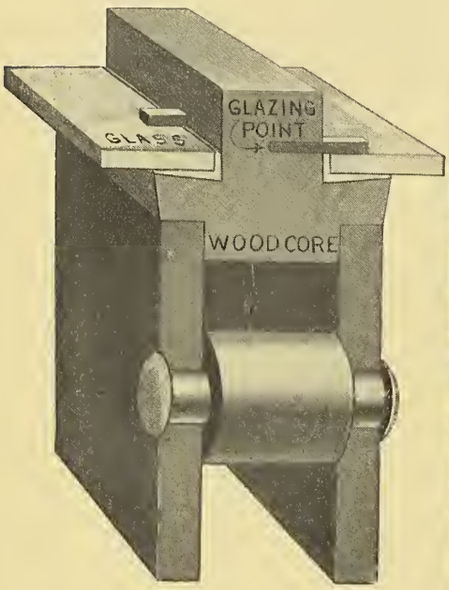
Tell your newsdealer now to send you a copy of the May 1st Vogue, and surely to reserve for you a copy of the May 15th Vogue. These numbers make it easy to solve just those summer problems that are perplexing you most at this moment.

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Managing Editor

VOLUME XXIII

NUMBER 5

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Here the problem of fitting the house to its site has been successfully solved by the arrangement of the garden which is planned to be quaint, simple and informal, even though laid out on somewhat formal lines, intended to give the effect of the cottage garden of England and the garden of Colonial times. The entrance to the house leads through the garden

House & Garden

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VOLUME XXIII May, 1913 NUMBER 5



The simplicity of Mr. Keen's house, so evident in its structure, is an element of beauty. A style appropriate to the locality was chosen and the best traditions of the older architecture preserved; the plainness of style wins beauty without the apparent struggle for effect that is so often evident

Homes That Architects Have Built For Themselves

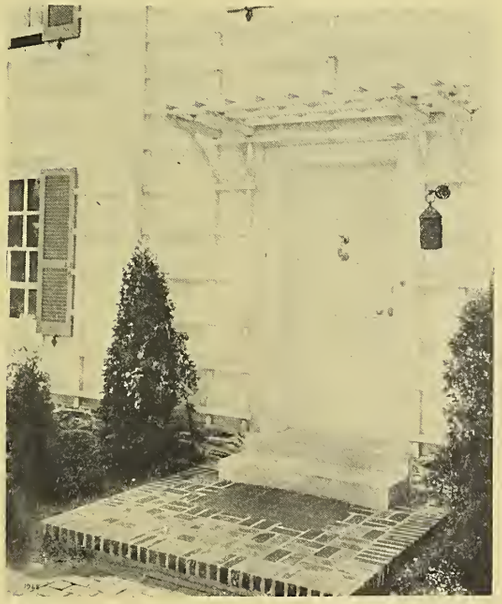
THE HOUSE OF CHARLES BARTON KEEN AT STRAFFORD, PENNSYLVANIA — A HOME THAT IS ADMIRABLY PLANNED FOR PEOPLE OF MODERATE MEANS AND BUILT IN HARMONY WITH THE SURROUNDINGS

BY MABEL TUKE PRIESTMAN

THERE is something distinctly individual and pleasing about the home that Mr. Keen has built for himself at Strafford, Pennsylvania. Although it is built after the manner of the farmhouse of Colonial days it possesses many unique improvements and well planned additions which display a notable development that has brought Mr. Keen widespread recognition.

The farmhouse type is the ideal American home, its architect maintains, for people of moderate means. It is the natural and logical outgrowth of the climate and of the traditions and sentiments of its inhabitants, and is best suited to its environment. For it is simple, broad, hospitable and rational in its close relationship with the trees and flowers.

The house was designed primarily to meet the demands of the family. At the same time there were many theories the architect wished to test. It is interesting to note these theories, and to find that after considerable care on the part of the architect they have proved as practical as they were ideal. The simplicity of the house is evident in the very structure of the building, which in itself is an element of beauty. The accentuated horizontal lines give the house the effect of harmonizing with the country and make it appear as a natural growth instead of something built or transplanted.



The lattice work for vines over the doorway is the keynote to the scheme of the whole house

In answer to the question aroused by the preference he has for the farmhouse type exemplified especially by the house adjoining his own, "Why do you favor heavy column supports for projecting roof lines?" Mr. Kean replied, "In houses in which the second floor extends over the first floor, the projecting roof lines cast a strong shadow and have a heavy effect. The heavy columns are necessary from the practical and esthetic standpoint to give them proper support."



This home is nothing more than the original farmhouse brought completely up-to-date. It is claimed that the farmhouse type is the ideal American dwelling, being the natural and logical outgrowth of the climate and traditions of the country. It is hospitable, broad and rational



The lattice-work for vines and the vines themselves give interest to what would otherwise be a too monotonous expanse of white plaster



The wide eaves over the windows are distinctive and the red brick tiles contrast well with the gray underpinning and white plaster walls

Another question put to the architect was "What do you aim to accomplish when planning a simple country home for your clients?"

"In the first place I aim to plan my houses to make them fit the requirements and mode of living, tastes and desires of those who will live in them. These considerations and the general plan arrangement dictated by the site, to take full advantage of the outlook and exposure, light and air, determine the style and general treatment. I am strongly convinced that we struggle too much for effect and if we plan and design in a more logical and natural way we get the most attractive and successful results. Houses of the same style and period, if designed in this manner have their own characteristics and charm and are really quite different and individual. I further aim to give as much of the home-like flavor and atmosphere as the conditions will permit."

Mr. Keen has found by experience that long narrow houses one room deep, or approximately so, are the most desirable where the proper exposure can be obtained admitting the maximum of sun and air. The modern methods of living require a greater

floor area for the second floor to accommodate the necessary number of rooms, than is required for the first floor with its few large simple chambers. In the farmhouse type expansion of the second floor is possible by building out the first floor below. Dormer windows are a necessity to give the proper amount of light and air to the interior. A group of such windows gives a better impression of a long low roof line than a series of separate or detached dormers. The December number of HOUSE AND GARDEN explained a house at Woodmere, Long Island, designed by Mr. Keen, which shows a more artistic group of dormer windows than does the house designed for his own use.

In looking through a number of photographs of houses planned by this architect one cannot help being struck by the examples of cottages with stucco walls. He favors stucco because by means of it he can most easily carry out his favorite color scheme, namely, white and green. He likes the shutters and roof green with a sharp contrast of white walls. These he partly conceals with a trellis, which when covered with vines gives a charming wall surface. The lattice-work primarily intended as a support for vines gives a scale to the whole house, accents the horizontal lines and by its pleasant shadows gives an interest to what would otherwise be a too monotonous expanse of white plaster. The vines relieve the monotony of white walls and soften its rigid lines. It is generally conceded that ivy and other creepers clinging to walls are apt to make the house damp, but when trained over lattice-work the vines act as a protection, shedding the water and breaking the force of a severe storm. Stucco is a favorite medium to-day with most of our well known architects. Its advantages lie in the fact that it is economical, decorative, and suitable both for winter and summer homes. Stucco being a mixture

(*Continued on page* 434)



The sun-room is admirably planned and furnished. The window-sashes are adjustable and can be removed if desired, giving an open porch



The antique furniture of the dining-room is well shown by its simple setting. In winter the rag carpets are replaced by Oriental rugs



An old-fashioned bedroom, Colonial in character, where the rush-seated chairs harmonize with the antique four-poster and rag carpet



The hallway is broad and roomy and the wallpaper is a reproduction of an old Colonial one, appropriate for the house and its furnishings



The mantel and fireplace of the living-room show the combination of decorative skill and restraint that are typical of the entire house

The Part Transplanting Plays in Garden Making

THE CORRECT METHODS OF TAKING UP TREES AND SHRUBBERY—THE BEST TIME TO MOVE THE DIFFERENT VARIETIES—ROOT PRUNING AND ITS RESULTS—SOME DIFFICULT VARIETIES TO HANDLE

BY GRACE TABOR

NOTHING in this world is more fixed in habit than trees or plants of whatsoever kind they may be. "Rooted to the spot" they certainly are, and uprooting them is a process which cannot fail to be very disconcerting to them, however carefully it is carried out. As planters we are, as a rule, curiously obtuse, however, for we give almost no consideration to this phase of transplanting. Rarely does one feel uncertain how to unplant a specimen, however doubtful he may be of his ability to restore it properly to the earth. Yet the success of the entire process of transplanting depends almost as much upon this first half of the work as it does upon the second half, so much more carefully considered.



Arrange the root stocks and fibres as nearly as possible in the position they would occupy in growing

Perennials and shrubs of almost any age may be lifted and moved from one spot to another without much reason to apprehend failure, but trees, of course, are another matter. Some species will hardly bear transplanting at all, while all kinds are risky handling unless they are small and have been originally nursery grown. These are sold as large as fifteen feet in height, with a trunk diameter of from three to four inches; and a nursery-grown tree of this size may be moved from its position, if this is not satisfactory, without much risk of injuring it. But above this size I would not advise transplanting, if more than one year planted. And certainly nothing smaller than half this size should be moved if it is a seedling or natural growth that is occupying its original position.

Trees grow at their roots very much as they grow at their tops, and respond to pruning below ground with just the same results, practically, as they follow branch pruning above—that is, the root system grows thick and dense and compact when the root tips are frequently shortened, either by actual pruning or by transplanting—which has the same effect by breaking off enough of the small root tips to induce much branching of root further up towards the tree bole—just as the branch system grows dense when the ends of the branches are cut back, or the tree is headed in by having its leading branch shortened. "Root pruning" is accomplished not by actually cutting off the roots, but by plowing about the tree, near enough to it and deep enough into the ground to reach the roots which it is desired to nip.



It is better to use tree-moving machinery and skilled labor with large specimens in order to avoid all risks

The dense balls of root network that result from such care naturally offer very little resistance to lifting the tree from the ground within a year, or perhaps even two years, from the time of its last planting. But by the end of this time the roots have progressed considerably in their natural way of growth and have extended out and into the soil to begin the anchoring of the tree, which is a part of their function when it has grown large and woody. Beeches, for instance—the beech is a notoriously "hard planter"—do not actually begin to send out new roots for some time after they have been moved, but when they finally get a start and begin to grow, their first efforts are directed to penetrating the ground just as far as possible, outward and downward. When a beech has been moved, therefore, and has made a start into actual growth above, beware of attempting to move it again. Its long roots put forth from the compact mass which it was induced to grow only by most careful contriving and care will make successful transplanting almost, if not quite, impossible, because many of them will suffer such injury that the tree cannot repair them.

Trees that have never been transplanted or root pruned develop their root systems according to natural habit and location, but the latter is never quite so important a factor as the former. Nevertheless it counts. Certain kinds of trees send straight down, directly beneath the trunk, one very long and very strong root, called a tap root, which is as large around, perhaps, as the tree trunk itself, and which reaches deep into the earth. Its integrity seems particularly vital, for injury to its tip will almost certainly cause the tree's death, in many species, and its great length and woody character make it particularly susceptible to injury if the tree is taken up. Trees with roots of this character are acknowledged to be

hard to transplant, even by their growers. The only way possible to overcome their aversion to being handled is to begin when they are very young, thus giving the tap root no opportunity to reach the depth it is seeking.

But a great many trees that do not have this great tap root still spread themselves about below ground in such a fashion that they stubbornly resist transplanting and suffer from it greatly, especially if growing in poor soil or where the moisture is deep down from the surface. If more than seven or eight feet high, such trees are more likely to die than to live when transplanted, save where the work is done by an expert. Tree moving machinery exists that will remove forest specimens of course; but the moving of these is a doubtful undertaking, even with the most skilled labor, and one which I never advise. After all the time of waiting for a tree to reach an appreciable size is not very great. And it is surely much better to have a well established and thrifty tree, at the end say, of six years, large enough to be a distinct ornament and to give definite shade with a promise of yearly increase, than to have a sickly forest specimen which will never recover its vigor, will gradually dwindle and ultimately must be taken away, leaving the original vacancy.



Not everyone realizes the benefits of garden beautification found in trees. At this season of the year much can be done by transplanting to gain the attraction that trees afford

Limit yourself to trees six or seven feet in height or under for transplanting natural growth, and to specimens not more than twelve feet high for nursery grown stock. If you can wait a season with the former, or even until next fall, plough or spade deeply around them now about a foot within the line of the diameter of their tops, and cultivate the space within this ring all summer even watering it if the soil or the season is dry, to encourage the growth of surface roots rather than the deeper ones.

But if you cannot wait, if the transplanting must be done immediately, make up your mind to unplant as carefully and patiently and thoroughly as you will replant, and unless you choose wrong varieties there will be no trouble. At the end of this article you will find out how to avoid these.

It is always safe to assume that the spread of the roots of even a root-pruned tree, is the same as the spread of its branches. On this line, therefore, marking what we may for convenience call the circumference of the roots, we begin the work of taking up any woody plant, whether tree or shrub. With a pick-axe work with back toward the tree trunk, digging up and loosening the earth from this line in towards the tree. When a layer is loosened, shovel it out; then loosen another in the same way and remove it, working more and more carefully as you get down to, or among the roots. In using spade or shovel, set the blade always with its *edge* towards the tree, not its flat face or surface. This avoids cutting the roots to any great degree, for the blade goes down between them instead of chopping them across transversely.

When a depth has been reached that really begins to loosen the specimen—it is not necessary to take away all the earth that is above the roots but only to go on picking it loose, deeper and deeper—a helper may take hold of the tree, and gently work it back and forth while the digging with the pick goes on. By and by the plant will readily tilt away over upon its side, thus allowing the one who is digging to work under the middle of it and gradually free the deepest central roots. And at last, with a gentle, even, long pull it will come free—but be sure that it *is* a gentle pull, and an even one. Never drag a shrub or tree forcibly from the ground, either through impatience or a mistaken degree of force. Go easily—*very* easily! It is much better to be over careful than a little less careful than you should be.

It sounds very simple to say restore a tree to the ground exactly as it came out of it; but in order really to do this, it is necessary to give attention to several things—and to all of these at once. Of course plants must be set into the ground to the depth at which they grew; then roots must have not only the same spread, but they must follow the same general direction down from the center towards the circumference; and the weight of the tree or shrub must be supported so that it does not drag at the roots as it settles. And finally the littlest roots—roots so small that they are like nothing so much as hairs—should all be restored to perfect contact with the soil! That is, the earth should enclose them on every side, casing them in completely.

Of course it is not possible to accomplish literally any such task as in this description of ideal transplanting. But actually it

(*Continued on page* 430)





Within and without a garden in the Far West that shows a successful pergola treatment and a walled garden of a Southern type

A PAGE OF SUBSCRIBERS' GARDENS

Editor's Note: From time to time House & Garden *will reproduce photographs submitted by enthusiastic gardeners who have felt that the instruction contained in the magazine, replies to queries, and the inspiration of others' work, have been beneficial in giving them results. There is much that may be gained by noticing what others have done. Miss Tabor will supply criticism and explanation, making the photographs more helpful.*

THE garden above was grown in a soil of clay and hardpan. Only the most carefully thought out scheme could have accomplished the results here shown—and within one year from planting. The pergola columns are made of three sections of concrete drain pipe, reinforced with an iron rod and poured full of concrete to make them solid. The whole structure, with its framework of rough saplings overhead, is particularly fine, conforming as it does to the best standards and the earliest tradition.



A CHARMING door-yard garden of the middle west, shielded and secluded and therefore inviting to use and repose—which the true garden always should be. It seems almost hypercritical to object to the planting around the fountain rim, yet the omission of this would be a decided improvement. This fountain basin is a formal one and its lines are as much a part of its decorative function as the little figure above, or the water itself. Some creeping plant that would not conceal them might be used.





The three pictures above show what has been accomplished by one garden lover in making a garden living-room secluded from the street and with all the privacy of indoors

A New Garden Enemy and How to Fight It

A FUNGOUS DISEASE THAT ATTACKS THE PEONY, HITHERTO CONSIDERED IMMUNE—HOW ANTS CARRY THE INFECTION—WHAT PREVENTIVE MEASURES MAY BE TAKEN

BY H. H. WHETZEL

PROFESSOR OF PLANT PATHOLOGY, CORNELL UNIVERSITY

Photographs by the Author

THE peony is frequently said to be a perennial markedly free from diseases and pests, but our observations extending over a period of the last eight years convinces us that this is not entirely true. During this time we have had the opportunity not only of examining many diseased specimens sent to the University for diagnosis, but have for the past four seasons observed the diseases of this plant as they appeared in the large collections grown in the variety test plats of the University. Brought in from many parts of the country and in large collections from various nurseries, it is not surprising that here we had a rather complete representation of peony diseases, at least five of which have appeared in these test plats, for the most part not very destructive. One disease, however, has occurred every season with more or less severe injury. This we are designating as the American botrytis blight of the peony to distinguish it from the European botrytis disease which appears to be different.



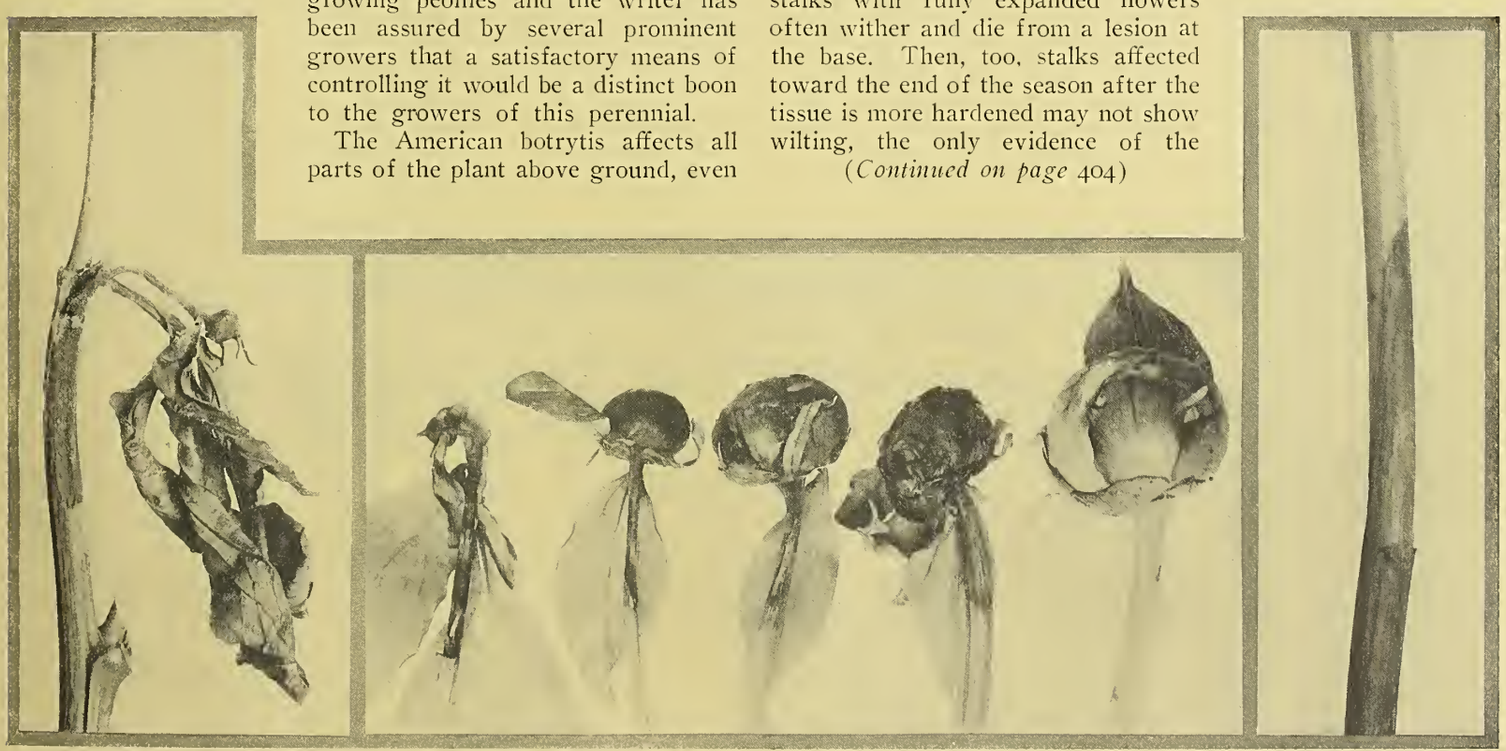
In the peony leaf blight the lesion usually appears first at the tip, extending in a V into the blade

It is a disease to be reckoned with in growing peonies and the writer has been assured by several prominent growers that a satisfactory means of controlling it would be a distinct boon to the growers of this perennial.

The American botrytis affects all parts of the plant above ground, even extending down the stem to the crown. Whether it ever invades the crown and roots is still a question. Probably it does not, since plants badly affected one season appear to grow equally strong tops the next.

The first appearance of the disease in the spring is usually in the form of a rot at the base of young stems. Shortly after they appear above ground they begin to wilt and droop, finally falling over. An examination of the diseased stalk shows it rotten at the base, the rot usually extending to the crown below ground and upward, often to the leaves. The advance of the disease up the stem is indicated by a water-soaked appearance of the recently affected tissues. The rotted part of the stem soon becomes brown or black and often covered with a gray-brown felt of the fungus causing the disease. Usually only a few stalks in the cluster are affected early, though in severe cases all may go down quickly. However, stalks in the cluster continue to be affected throughout the season if conditions be favorable, and large stalks with fully expanded flowers often wither and die from a lesion at the base. Then, too, stalks affected toward the end of the season after the tissue is more hardened may not show wilting, the only evidence of the

(*Continued on page* 404)



The photograph at the left illustrates a characteristic appearance of young peony buds and leaves blasted by the botrytis. In the center are shown diseased buds compared to a healthy one, and at the right is a stem exhibiting the water-soaked appearance caused by the fungus



If you would double the interest centered about a pond or lake keep some swans swimming about in it. They need little attention if proper quarters are given them in a secluded place near the water's edge

When Fine Feathers Make Fine Birds

ORNAMENTAL LAND AND WATER FOWL THAT GRACE THE COUNTRY PLACE —BIRDS THAT HAVE ALL THE INTEREST OF PETS—HOW TO CARE FOR THEM

BY E. I. FARRINGTON

Photographs by E. J. Hall and Others

WHILE it is true that fine feathers may not make fine birds when mere utility is considered, yet beauty of plumage is an important item in the breeding of ornamental poultry. Take, for example, the peacock. With its blue neck, its black and green wings, its brown, violet and gold train and its aigrette or crest of twenty-four upright and richly-colored feathers, the peacock is an object of admiration to all, including himself. Were it not for these splendid adornments there would be no place for this bird on the country estate or anywhere else. Both the flesh and the eggs are palatable, to be sure, but there is no demand for them.



The gorgeous plumage of the peacock demands a formal setting or smooth green lawns to be fully effective

In these modern days the peacock is valued only for his ornamental qualities, and they hardly atone, sometimes, for the vexation one feels when startled from slumber by the hair-raising screech with which he salutes the morning sun. He is as vain as a village belle, loves to disport himself before the hens, and finds pleasure in the mirrored reflection he finds in the cellar window.

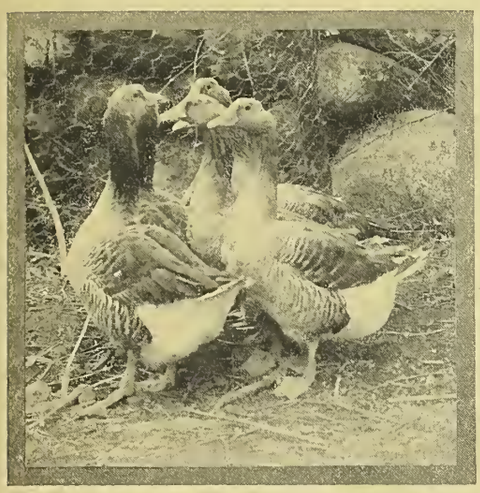
The most striking physical characteristic of the peacock is his train, commonly supposed to be his tail. The real tail is composed of plain brown feathers about six inches long, which can be held erect, and which serve to support the wonderfully brilliant train, spread out like a disc and marked with gorgeous eye-like spots. When he stands with this huge fan opened and glistening in the bright sunlight, the peacock is incomparably lovely; his vanity is forgiven him. When the moult comes on the feathers fall out gradually and may be picked up here and there all about the grounds. It isn't a sin to extract by hand the few which are held to the last, if they can be reached as the bird perches on the grape arbor or the limb of a tree at night.

The peacock and his consort, small, modest and unbedecked, demand no special care. They live on the same fare as the barnyard fowl, but resent confinement. They can fly freely, and spend their nights in the trees or elsewhere outside, regardless of the weather or the time of year, except that on rare occasions they may seek the shelter of an open shed. They like green stuff, and sometimes do damage in the garden.

Peacocks do not get their trains until the third year, and should not be used for breeding until then. The peahen nests on the

ground and lays a few eggs in late spring. If the eggs are not molested, the hen will bring off her small brood in about 28 days. The treatment customarily given turkey poults will suffice for them, which means that they must be kept dry and must be protected from rodents. Hard-boiled eggs, bread crumbs, bread soaked in milk, or rolled oats should constitute the menu for the first two or three weeks, cracked grains being gradually introduced. It is not feasible, as a rule, to try bringing up the youngsters with common hens. The hens are almost sure to desert their charges long before the latter are able to look after themselves.

It is an easy matter to get from $15 to $50 for a pair of peafowl, but it is not necessary to raise young birds every year, unless the profit in them is an object, for the old birds live long, even up to 25 or 30 years. There are also white peafowl, and they bring a much higher price, not because they are more beautiful than the kind commonly seen, but because they are much more rare. Peacocks are better adapted to rather large estates than to small places, but they are among the most ornamental of birds wherever they may be.



Toulouse geese are handsomely feathered, but are too noisy to be kept near the house

Pheasant breeding is a highly popular diversion across the water, and is being taken up by many people in this country. Even a suburbanite with an ordinary back yard can keep pheasants, for they make little protest at being confined and are not difficult to care for. When first hatched, pheasants are very delicate, also very lively. They must be kept warm and dry and not allowed to stray away. Most commonly they are hatched under bantam hens, or the fluffy little Japanese Silkies, and from 21 to 25 days are required, according to the variety. If a small incubator is available, it is an excellent plan to transfer the eggs to the machine a few days before they are due to hatch. Then they will get a safer start in life.

The first of June is quite early enough to set pheasant eggs, and ten or a dozen are sufficient for one hen. When the little birds are hatched naturally, it is well to run a low wire fence around the nest box where the hen is setting; otherwise the first ones to appear may start out to see the world before their more belated brothers and sisters have pecked their way to freedom. For the first few weeks the youngsters must be kept perfectly free from dampness and draughts. By the time they are two months old they become strong and hardy, and at four months are almost fully grown. They forsake their foster mothers early and go hunting bugs and worms on their own account. Lice and gapes are the two evils to be watched out for. Powder will destroy the former, and fresh ground obviates danger from the latter.

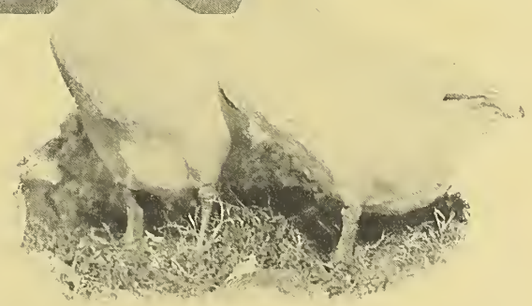
In England, ant eggs are considered almost indispensable for young birds, but they are not needed here. Some American breeders feed maggots, but Hamburg steak answers very well. In fact, excellent results have followed the use of canary seed, rolled oats and common chick feed. It is a good plan, though, to give a custard for the first week or two, made by beating up a raw egg in a very little milk.

Mature pheasants are exceedingly hardy and ask only an open shed, with a long run, which they will use winter and summer alike. The shed is best placed when it faces the south, and must be tight and dry. It is well to have the floor raised a foot higher than the ground outside, and it should be kept covered with several inches of sand. The front of the house may be boarded down a little ways to keep the rain from beating in to a large extent, but the house must not be dark. The birds like a retreat of some sort, so it is well to have a pile of brush in one corner; a large box with a hole in it will answer as well. A few piles of brush in the yard will be welcomed, too. There must be perches for the pheasants in the shed, but nests would be superfluous, as the eggs are laid in the sand. Commonly the eggs are dropped late in the day, and it is well to gather them as soon as possible, for pheasants are very prone to acquire the reprehensible practice of feasting on their own product.



Muscovy ducks are not only attractive but are especially good for table use; besides they may well be kept upon the small place

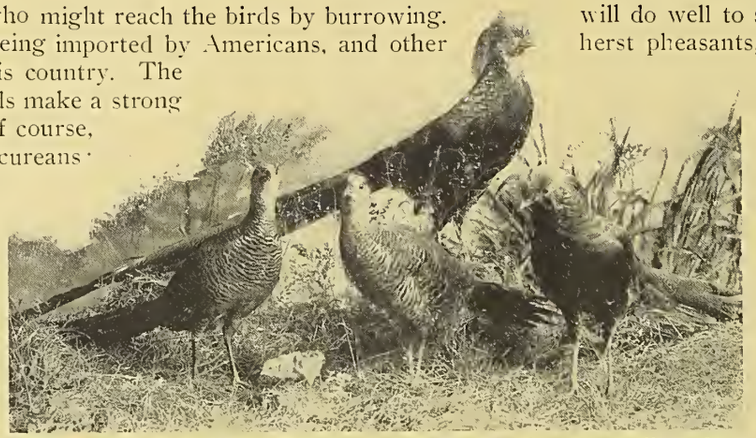
The yards must be covered, and it is well to use netting with one-inch mesh, in order to keep out sparrows, which steal much grain. Also it is wise to have a concrete foundation extending down to the frost line under both the shed and the yards, or to sink the netting into the ground deeply,



The curious carriage and peculiar beak formation of Chinese geese make them a distinctive attraction

in order to keep out marauders who might reach the birds by burrowing.

Thousands of pheasants are being imported by Americans, and other thousands are being raised in this country. The elegance and beauty of these birds make a strong appeal. It is also well known, of course, that they are the delight of epicureans; in several states large numbers have been liberated, in the hope that they would multiply and add to the decreasing list of game birds.



Pheasants are as brilliant as peacocks and may be kept in small confines

The pheasant most commonly and most successfully reared in the United States is the Chinese Ring-necked pheasant. No doubt the English bird, also imported largely, is a descendant of the Chinese Ring-neck, but it is not considered quite so hardy as the Oriental pheasant. The bird often called the Mongolian pheasant is really a Ring-neck pheasant. The Ring-necks lay more eggs than most of the other sorts—often as many as 60—and as a rule they have a high percentage of fertility.

From the standpoint of fine feathers, the Golden, Silver and Lady Amherst are the varieties to keep. They may not be quite so easy to raise as the English or Chinese Ring-neck, but they are tamer and more ornamental. The Golden pheasant defies description, to borrow a newspaper phrase. It is easy to call it the most brilliant bird known, to tell of its orange crest, its rich red breast, its blue wing coverts, its long tail and the stiff red feathers on each side, but the words convey little idea of the real gorgeousness of the plumage. This variety is easy to keep and in high favor among amateurs. The Silver pheasant is also handsome, with its two-foot tail and bright red wattles. Although tame, easy to keep and beautiful, the Silver pheasant has one fault—it makes a rather unpleasant noise. In any collection the Lady Amherst pheasant is sure to excite special comment. The cock's great length of tail is a prominent characteristic. This is a bird of many colors—green, black, red, white and gray. Most amateurs will do well to start with Golden and Lady Amherst pheasants, although the prices are considerably higher that those obtained for the Ring-necks. This is when they are to be kept in aviaries or allowed to wander about the grounds. For stocking coverts the Ring-neck is, of course, the best. Other ornamental and popular pheasants are the Swinhoe, the Elliott and the Reeves, the latter having the longest tail feathers of all, extending to four feet and over. As a class, pheasants take the lead among all fine-feathered birds.



Polish fowl are very ornamental in their black plumage and great turban-like white crests



The Black Spanish is one of the oddest of poultry with a long white face hanging very much like a bib

There are several breeds of poultry kept by fanciers which are highly ornamental, but more domestic in their habits than peafowl and pheasants. They include the Hamburgs, Polish, White-Faced Black Spanish, Houdans, Andalusians and various members of the bantam family. The Hamburgs are aristocratic birds, and, as the American Standard of Perfection says, the Silver and Golden Spangled and the Silver and Golden penciled varieties rival the pheasant in beauty of plumage. In a yard or on the lawn the Hamburgs are exceedingly handsome. They have other qualities, too. They are exceptionally prolific and lay most of the year. Their eggs are white like those of Leghorns, although hardly as large. This is a very old breed and the young birds come remarkably true to type.

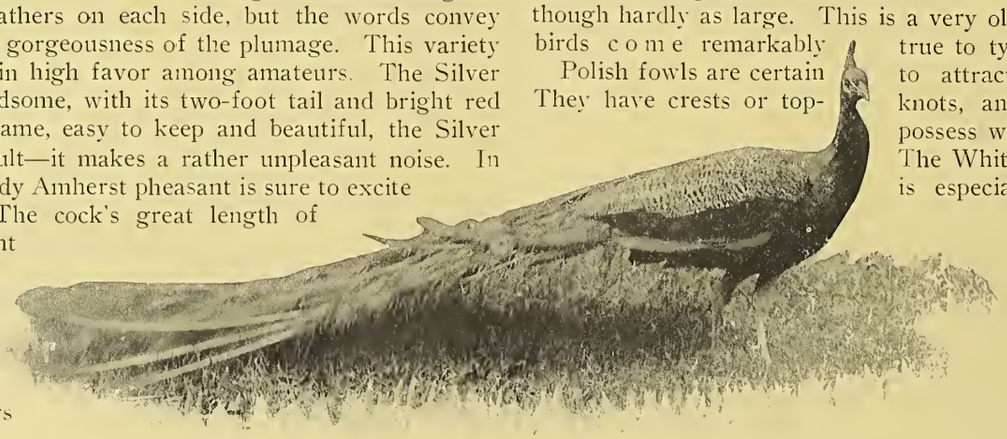


Houdans have every fifth feather tipped with white, which gives them a peculiar mottled appearance



The Silver Lace Wyandottes are a popular domestic breed with extremely beautiful feather markings

Polish fowls are certain to attract attention anywhere. They have crests or top-knots, and some varieties also possess what are termed beards. The White Crested Black Polish is especially interesting, being solid black except for the pure white head dress. The Silver and Golden varieties have beautifully marked feathers.



(*Continued on page* 415)

Cut Flowers from the Fall Garden

THE THREE MAINSTAYS OF AUTUMN—CHRYSANTHEMUMS, DAHLIAS AND ANEMONES—THE MODERN IMPROVED SORTS AND THEIR ATTRACTIONS—SOME GOOD VARIETIES

BY A. W. DEAN

Photographs by George Oakes Stoddard and Nathan R. Graves

MY summer garden is not as great a subject of care as is the garden of spring or fall. When the early bulbs have had their bloom I leave the garden very much to itself to be reigned over by a few of the most flourishing perennials. But when late summer turns into fall the stars of my garden appear. I have three favorites which seem to make my garden more glorious than any of the other bloom. They are, chrysanthemums, the hardy sort, dahlias and anemones. Often asters are used as well, but the gorgeous brilliancy of my three favorites seems to be without peer. From the last of August until frost there is something blooming—a bloom appreciated because so much of it is desirable for cutting. Besides this there are such wonderful chances for color combinations, the reds and browns and golds may be blended and perhaps emphasized with highlights of pure white. The busy nurserymen have done so much in developing the races of these fall flowers that the stiff varieties we used to know are quite surpassed by extraordinarily graceful and immense blossoms.



The hardy chrysanthemums appear in a wonderful variety of forms from the compact type to quilled Souvenir d'Or

My first care is the little hardy chrysanthemum. True, it is an old-fashioned flower, but has been neglected for so long in this section that it appears now almost as a new variety. Growers are appreciating it more and more and developing new types.

The little pompon chrysanthemums belong in the garden of him who is hurried. They take little time and little care, but bring rich reward. Of course, attention to disbudding and cutting back, brings results in larger blossoms, but even if you just plant them and let them grow in masses, the results are most satisfactory.



Japanese anemone is one of the most satisfactory flowers of the fall and is especially valuable for cutting. There is great diversity of color in the blossoms

After there is no possibility of frost you may set out the plants, which, if you are wise, you will order early. They are grown in the nursery from cuttings and divisions, but best results come in the use of pot grown plants made from cuttings. Your only care should be in the selection of a well drained spot in the garden, with a lightish soil. Heavy loam or clay is apt to give opportunity for winter killing, and in such soil the plants do not thrive vigorously. Protection on the north is valuable, and you may set your plants out in the early part of May if planted on the south side of a fence, or if not in such a situation, close to shrubbery or a growth of plants that will keep off the wind. The stocky little plants will soon show rapid growth, if in well cultivated and fertilized soil, and by the end of the summer will need a stake to protect them at the time of bloom. Protection will prevent an untidy appearance of the bushes and is conducive to better bloom. I like to see the chrysanthemums massed; the rich yellows, golds, browns and maroons may be combined to make a border that is very beautiful. If the plants are set about eighteen inches apart they will not interfere and will succeed well.

It is hardly worth while to go into the subject of classification with these flowers. There is some misconception as to races, types and varieties, but the nurseryman's catalogue is quite descriptive



This old dahlia has been developed into such modern beauties as the cactus and peony flowered sorts



Golden Shower is descriptive of this unique form of hardy chrysanthemum



Julia Lagravere is one of the best known types. It is a rich, deep garnet



Baby Margaret is a white button type of considerable beauty and a trifle larger than Baby

of the colors and forms of various blossoms, and all you need to do is to select according to your taste. These flowers have the advantage of variety and naturalness over their pampered sisters, the greenhouse sort, and I do not care to place them by kinds, but grouped and massed together, chosen only for their colors I get my best effects. They vary from the little button types to large blooms about two inches in diameter. The following are some varieties that I have had good success with: Baby, a small button type of clear bright yellow; Baby Margaret, a little larger than Baby, but with white buttons; Bedouin, a small sort of deep maroon mixed with white; Savannah, a button type of brilliant yellow; Mary Keyes, a single form of white like a daisy; Autumn Queen is almost two inches in diameter, a beautiful rosy pink; Soeur Melaine, a white, full flowered sort; Julia Lagravere, one of the most popular of all, shades from maroon to deep garnet; Fremey is an unusual type with crepe petals of a brick red; Globe d'Or is a large, light lemon yellow flower; Strathmeath, an attractive, rosy pink; Stratagem, about the same size, but crimson with a glint of gold; Brown Bessie, a terra cotta brown button type; Nellie Rainsford, medium sized, orange shading to red; St. Illoria, a pretty sort with quilled petals of rose tipped with silver; Sunset is large type of glowing color with petals of scarlet bronze about a golden center; Daybreak is a large, soft pink.

Round tight dahlias that we used to see primly guarding a stiff walk seemed like so many colored cabbages, and were suggestive of the dreadful period of wax flowers beneath glass domes. Nowadays the word dahlia means an entirely different thing and the careful developers of this flower have eventually added to its improved beauty the attraction of fragrance. Its deep green foliage and well formed bushes make a background

(*Continued on page* 402)



Irene Craig is a hardy chrysanthemum of large size, pure white with yellow center



The cactus dahlia is an interesting addition to any fall garden, its loose form being a great improvement



Harold Shaw has white petals, the tips of which are tinted with pink



The sundial adds the final touch of completeness to the garden, and lends an atmosphere of charm that is difficult to be duplicated by any other single feature

Simple Instructions for Plotting a Lawn Sundial

CALCULATIONS ENABLING ANYONE TO LAY OUT A SUNDIAL WITHOUT TECHNICAL KNOWLEDGE—COMPLETE MEASUREMENTS IN INCHES FOR A DIAL AND GNOMON THAT WILL WORK ACCURATELY IN ALL SECTIONS OF THE COUNTRY

BY CLAUDE L. WOOLLEY

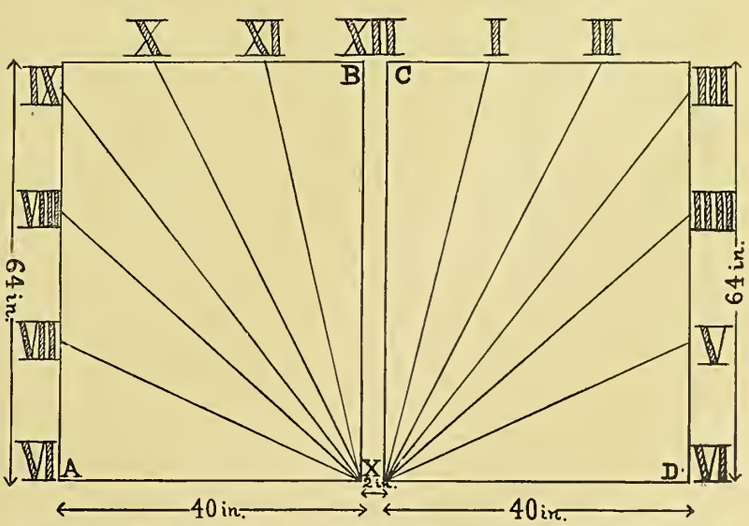
Diagrams by the Author



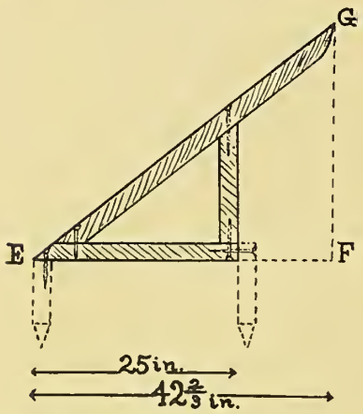
ORDINARILY, making a sundial wherein the hour lines and figures are laid out and marked with lines of various colored flowers, or other means, is not necessarily a difficult matter, but it requires a knowledge of the measurements for the positions of the hour lines for various latitudes, together with the measurements for the proper angle of the gnomon, or piece that casts the shadow.

With this information at hand, and a level lawn or other suitable piece of ground on which the design may be placed, you are in a position to lay out a large dial that will be very pleasing and attract much attention.

In the present article I have supplied in the drawings and tables of measurements the proper measurements in inches for the positions of the hour lines, and for the proper angle of the gnomon, for some of the principal cities of the United States, embracing a general range of North Latitude of from twenty-nine to forty-eight degrees from the equator. To apply these measurements and directions to any given location it is necessary only to select the measurements in the tables which are nearest in a north or south direction to the place where the dial is to be constructed and made use of. To illustrate, let us draw an imaginary line on the map, running east and west through Chicago. All cities or towns nearest in a north or south direction to that line will use the measurements for Chicago; the same rule is to be applied in the case of other cities. This imaginary line, passing in an east and west direction and cutting through any given city on the table, may be extended, not only across the United States, but around the whole northern hemisphere, and cities and towns nearest to it in a north and south direction may make use of the measurements for that city. The distance that you may be located east or west



This figure illustrates the outline of a rectangular dial, and shows the measurements and positions for the hour lines and figures. The letters refer to the table on the next page



The gnomon is made of 2″ x 2″ pine and fastened with screws

of the city of the table whose measurements you use, is of no consequence. The measurements will apply very accurately to locations within a distance of seventy-five or one hundred miles north or south of the line referred to in any given case, and will work well enough for all practical purposes for locations as much as one hundred and seventy five or more miles north or south of the line referred to.

The best results are obtained by preparing a level piece of ground, with a surface much like a tennis court, the surface soil being mixed with a certain amount of clay. A level lawn may be utilized, but the rapid growth of the grass covers the hour lines and figures of the dial unless it is clipped every few days and kept up carefully.

New Orleans, La.	D to 5 o'clock	20″	C to 1 o'clock	8½″	
St. Augustine, Fla.	D to 4 "	45½″	C to 2 "	18½″	
	D to 3 "		C to 3 "	32″	
	A to 7 "	20″	B to 11 "	8½″	
	A to 8 "	45½″	B to 10 "	18½″	
	A to 9 "		B to 9 "	32″	
Charleston, So. Car.	D to 5 o'clock	20″	C to 1 o'clock	9″	
San Diego, Cal.	D to 4 "	42″	C to 2 "	20″	
	D to 3 "		C to 3 "	35″	
	A to 7 "	20″	B to 11 "	9″	
	A to 8 "	42″	B to 10 "	20″	
	A to 9 "		B to 9 "	35″	
Savannah, Ga.	D to 5 o'clock	20½″	C to 1 o'clock	9″	
Tombstone, Ariz.	D to 4 "	44″	C to 2 "	20″	
	D to 3 "		C to 3 "	34″	
	A to 7 "	20½″	B to 11 "	9″	
	A to 8 "	44″	B to 10 "	20″	
	A to 9 "		B to 9 "	34″	
Memphis, Tenn.	D to 5 o'clock	19″	C to 1 o'clock	10″	
Flagstaff, Ariz.	D to 4 "	40″	C to 2 "	22″	
	D to 3 "		C to 3 "	37″	
	A to 7 "	19″	B to 11 "	10″	
	A to 8 "	40″	B to 10 "	22″	
	A to 9 "		B to 9 "	37″	
San Francisco, Cal.	D to 5 o'clock	18″	C to 1 o'clock	11″	
Springfield, Mo.	D to 4 "	38″	C to 2 "	23″	
	D to 3 "		C to 3 "	39″	
	A to 7 "	18″	B to 11 "	11″	
	A to 8 "	38″	B to 10 "	23″	
	A to 9 "		B to 9 "	39″	
Washington, D. C.	D to 5 o'clock	17″	C to 1 o'clock	11″	
Baltimore, Md.	D to 4 "	36½″	C to 2 "	23″	
Denver, Colo.	D to 3 "	64″	C to 3 "	40″	
	A to 7 "	17″	B to 11 "	11″	
	A to 8 "	36½″	B to 10 "	23″	
	A to 9 "	64″	B to 9 "	40″	
New York, N. Y.	D to 5 o'clock	17″	C to 1 o'clock	11″	
Philadelphia, Pa.	D to 4 "	35″	C to 2 "	24″	
Indianapolis, Ind.	D to 3 "	61″	C to 3 "		
	A to 7 "	17″	B to 11 "	11″	
	A to 8 "	35″	B to 10 "	24″	
	A to 9 "	61″	B to 9 "		
Boston, Mass.	D to 5 o'clock	17″	C to 1 o'clock	11″	
Chicago, Ill.	D to 4 "	35″	C to 2 "	24″	
	D to 3 "	60″	C to 3 "		
	A to 7 "	17″	B to 11 "	11″	
	A to 8 "	35″	B to 10 "	24″	
	A to 9 "	60″	B to 9 "		
Buffalo, N. Y.	D to 5 o'clock	16″	C to 1 o'clock	12″	
Madison, Wis.	D to 4 "	34″	C to 2 "	26″	
	D to 3 "	58″	C to 3 "		
	A to 7 "	16″	B to 11 "	12″	
	A to 8 "	34″	B to 10 "	26″	
	A to 9 "	58″	B to 9 "		
Bangor, Me.	D to 5 o'clock	15″	C to 1 o'clock	13″	
St. Paul, Minn.	D to 4 "	32″	C to 2 "	27″	
Salem, Ore.	D to 3 "	55″	C to 3 "		
	A to 7 "	15″	B to 11 "	13″	
	A to 8 "	32″	B to 10 "	27″	
	A to 9 "	55″	B to 9 "		
Tacoma, Wash.	D to 5 o'clock	14″	C to 1 o'clock	13″	
Bismark, No. Dak.	D to 4 "	31″	C to 2 "	27″	
Quebec, Canada	D to 3 "	54″	C to 3 "		
	A to 7 "	14″	B to 11 "	13″	
	A to 8 "	31″	B to 10 "	27″	
	A to 9 "	54″	B to 9 "		

A table of measurements to be applied to Fig. 1, and varying according to geographical position



By drawing a circle about the first plan a circular dial may be made

The general outline of the dial, together with the hour lines and figures as shown in Figure 1, may be composed of rows of various colored low-growing plants. Other materials are liquid plaster of Paris, or liquid cement whitened by adding some slaked lime to it and poured into grooves cut into the soil, or small broken pieces of marble or limestone pressed into the soil on the lines and figures as laid out.

The gnomon, or shadow piece, as shown in Figure 2, is composed of square white pine or other wood, 2″ x 2″ in diameter. If it may be made of metal accurately cut out, of course its durability is increased. It is of the shape as shown in the shaded portion, it being understood that the

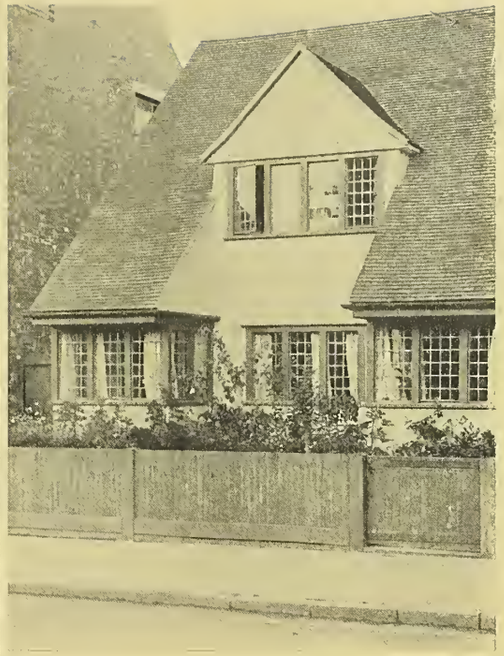
(Continued on page 413)



Care should be taken in placing the sundial not only in the preparation of a level stretch of lawn or turf, but to make it a feature in the garden design. A seat such as this about it makes the sundial dominate a special corner of the garden in an effective and appropriate manner. Do not let the vegetation interfere with the sunlight that reaches the dial



The Garden for the English Type of House



THE HARMONY OF COMPOSITION TYPICAL OF ENGLISH GARDENS

HOW A HOMELIKE PRIVACY RESULTS FROM PLANTING METHODS

THREE FACTORS WHICH UNITE IN GIVING THEM THEIR PECULIAR CHARM AND INDIVIDUALITY

BY GRACE TABOR

Photographs by Thos. W. Sears and Others

GARDENS are gardens, of course, and at a superficial glance one may seem very like another, although even cursory inspection usually notes the presence or absence of that elusive charm which is the very soul of a garden. It requires really close observation, however, combined with careful analysis, to discover the reason for the presence or lack of this quality. Indeed, gardening is so subtle and intimate an art that one despairs altogether of presenting some of its nicer points, or of defining many of its requirements. Knowledge of them and feeling for them must grow, along with the growth of cultural skill, as one gardens.

But there are three factors in the garden which is now up for consideration which are obvious, and that go a long way toward establishing its individuality and very distinctive charm. These are, first, its brim-fulness, if I may coin the word; second, its absolute freedom from any sense of clutter and crowding, in spite of this; and, third, the fact that it has a "brim" and never runs over. It is in the analysis of these three factors, I think, that we shall find a clue which may be taken as a guide to the reproduction of a true setting for the house which has had the English dwelling, whether cottage or manor, for its prototype.



A hillside garden where there is ready entrance from every level and a delightful air of familiarity prevails

Gardens and gardening about the old houses of this type begin at the house door and extend to the limits of the space set apart for dooryards. Against this brim the abundance within rolls up and falls back upon itself, as it were, in an abandon of plenty; and it is not too much to say that the very existence of the garden depends upon this sharply defined and very carefully defended division between it and the world. Remove this and it would spill out and run away; and the outer, coarser world would run in—and no more would there be a garden in that place. Wall, fence or hedge must therefore inclose the garden space first of all. Out from the house and in from this the garden then develops, and in the smaller gardens that are a part of cottage homes, every inch of the space lying thus between house and boundary is not infrequently a mass of flowers.

It is in the care of these and in their arrangement that the sense of crowding which might so easily result from such planting, is avoided. Margins are scrupulously kept; rows, where they exist, are as rigidly maintained; tall growing plants that have a tendency to lop over or spread themselves about, are trimly supported and held in place; dead growth, either leaf or branch, is removed as soon as it shows withered, and turning



The walks are as distinctive as other parts of the English gardens, and this one of earth is in characteristic harmony with flowers and cottage



There is a fulness about these gardens which, although it does not result in overcrowding, yet occupies all the available space

from its green freshness; faded flower heads are trimmed off; and everything is perpetually in order. Everything has its place and keeps it, thanks to the discipline maintained; consequently everything has room enough—and there actually *is* no crowding, although the space is brim full. However small the space may be, too, it still affords garden opportunities, under this method.

Here, for instance, is a scrap of land alongside an old stone cottage which is as eloquent an example as may be found of adaptation to conditions, and of small opportunity made the most of. The crudest materials have been used—stones and old tree stumps, hollowed out to hold earth—but a garden bit of exquisite harmony and feeling has been produced; and this on a four-foot strip against a building—one of the most difficult spots to handle satisfactorily. Really this little garden is almost vertical, with the vines and rose against the cottage and the other plants among the rocks so close at the foot of its walls. The rose which is not at once apparent in the picture, ascends against the wall beyond the bow window, one branch sprawling over the stump at the right.

This spreading and climbing rose emphasizes one of the secrets of the charm of old gardens generally, and of this type of garden in particular; that is, the close relationship, the intimacy existing between the house and the garden. The nearness of the house to the ground is one reason for this unity, of course, but growth that ascends the house wall as well as spreads outward at the foot of that wall unites house and ground as no merely vertical growth possibly can. It is directly into the house entrances that the well-kept garden walks lead, however, with no arrogant steps to interrupt or delay them on their way; and this makes it seem that the turf and the flowers themselves would be as welcome inside as out, if they chose to venture within such inviting portals; no barrier is ever raised to stay their progress.



A walk of four parallel rows of tiles set in the turf not only adds character to the stretch of turf, but prevents an unsightly path being worn in the grass

Here is a hillside garden, for example, where there is ready entrance from every level. Surely it would occasion no surprise to find the flowers marching in and making themselves at home. Why shouldn't they? Is it not evident that outdoors and indoors are so close to each other as to be almost one, in this home? Observe that here in this garden, however, even with all its abundance and sweet disorder, there is no clutter and no crowding. The graveled walks maintain their proper lines; and the luxury of bloom is such as comes only to plants that do not have to struggle for a living. Here is a veritable flower paradise, where none is worried or troubled—and none is lonely.

The walks themselves are as distinctive as all the rest in these gardens that are so close and intimate a part of the house and the home. Nowhere is there a walk that in itself is not interesting, full of character, and possessed of a real beauty. Such a hideous thing as cement is unknown; care and thought have been put into the construction of these homely utilities, and they are developed as real features, with real indi-



The terrace vies with the porch as a loitering place on summer afternoons, careful flower planting adding greatly to its charms



The intimacy and home-likeness which are prominent features here are two of the greatest assets in gardens for the English type of house

viduality. Here is one of earth, leading through this wilderness of blossom to the cottage doorway. Into it gravel and small stones have been worked, in time, until it is as smooth and hard as a walk of brick. Here is another of tile, laid neatly just into the ground, in four parallel rows. Could anything be more charming? The breadth of turf between the long borders of foxglove and plantain lilies on either side is all included, of course, in the entrance space; but the tiles take the actual wear, and prevent an untidy little path being trodden in the midst of the turf stretch.

Here, by the way, is a garden space not quite so lavishly filled. To the left lie the fruit and kitchen garden; to the right a second broad space of turf equal to the entrance space, with another border beyond, parallel with the first. Simplest of simple designs it is; yet what distinction it has, and how truly picturesque it is. Here would be commonly found, in altogether too many American dooryards, a flower-bed shaped like a star or a crescent or a heart—or goodness knows what! And at great trouble this ugly and unnatural form would be maintained, its edges trimmed and its even proportions carefully guarded. Whereas, the long straight border has little or no difficulties of this sort to be overcome; and it is infinitely more beautiful.

The brick walk which leads into the old cottage at Berry is a bit more pretentious perhaps, but not a bit more attractive, than the others. Here an edging of low growing boxwood restrains the flower borders on either side. These, by the way, will form a veritable hedge before the summer wanes, with their tall growth and the lesser, denser specimens before it. Where but before an English cottage would it be thought possible or proper to have such great tall fellows growing out in the open? The commoner way would be to plant them against a wall or before a building where something taller than they would rise back of them. This is not necessary; hollyhocks beside a path are as suitably placed as ever they are when against the house. Be sure of this.

Flowers in the greatest abundance the garden about the English type of house must have; but these will not necessarily be the flowers commonly found growing in the gardens of English houses. Plants which do so well there sometimes will not thrive here at all. So it is a question of selecting, of finding out what will furnish the very best results in a given place—and then of concentrating on those things. The garden that is well planted will be dominated by one thing at a time, and half a dozen varieties of superlative merit will come nearer to duplicating the effect of the Old World garden than twice that number of less excellence. Remember that it is effect that is to be striven for; not actually an imitation of the English garden, in kind as well as design. Native wild asters will produce here a mass of rich color and gorgeous floral display quite different from the English daisy, for example—yet in its way quite as superlatively good. A

(*Continued on page* 406)



More pretentious than the one pictured on the opposite page, this brick walk leading to a Berry cottage doorway is edged with low boxwood



Before planting one should get an idea of the height and spread of a plant before placing it in colonies. Cosmos, for instance, needs some tall companion and should be used in the background or to break a vista

The Best Use of Annuals

THE FUNCTIONS OF ANNUALS IN ROUNDING OUT FOR HARDY GARDENS—GUIDING SUGGESTIONS FOR PLANTING—VARIETIES THAT SHOULD BE BETTER KNOWN

BY H. S. ADAMS

Photographs by N. R. Graves

BEST of all the uses of annuals is the most natural one—the employment of them to fill any spaces that hardy plants leave in the garden. Then, if the planting be naturalistic, the flower colony looks as though it had sprung up spontaneously.

No one can be said really to know annuals who has not seen them in such plantings. Barring a few of the very stiff ones, they take on a grace and beauty—a final touch of both—that is lacking in the formality of set designs. It is the difference between the irregularity of a dazzling patch of corn poppies in an English field and a circle, square or triangle of the same flowers cut out of a patch and removed where there is no more of the kind.

Annuals thus employed are invaluable to the hardy garden and borders. Even in the best regulated families, hardy plants cannot always be made to cover every inch of the ground that they are required to fill unless they have evergreen foliage to begin with, and even then there may be perishing just the same. Spring bulbs die down after blooming, the early lilies soon turn brown—as do bleeding-heart, Oriental poppies and some other perennials. Not a year but there are bare spots that nature will strive to fill with weeds rather than have them bare. Here annuals are welcomed.







The peony has been wonderfully improved in color and size, and is valuable for borders and edgings

But it would be doing annuals scant justice to leave them to hazards of this sort. Paradoxical, though it sounds, it is an unideal hardy garden that does not provide in the layout for one or more colonies of annuals. Without them there is, somehow, a sense of incompleteness in the garden.

The greater the departure from the conventional the more objection there is to using double flowers. The objection is highly elastic; nine times out of ten it need not bar the showy double forms of the China aster, clarkia, zinnia, stock, poppy and African marigold. The chances are, however, that where thought is given to the matter the peculiar advantages of single forms for drifts and other naturalistic plantings will be apparent; single China asters and poppies look natural, double ones do not.

Besides those mentioned some of the best annuals for unconventional massing are larkspur, *Arctotis grandis,* godetia, lupine, Drummond's phlox, schizanthus, candytuft, leptosyne, nigella, cornflower, eschscholzia, cosmos, petunia, nemophila, *Saponaria vaccaria,* phacelia, scabiosa, chrysanthemum, spreading lobelia (*L. speciosa*), nemesia, *Gypsophila elegans,* nicotiana, viscaria, *Brachycome iberidifolia,* portulaca, coreopsis, alonsoa, *Dimorphotheca aurantiaca,* leptosiphon, petunia, sweet sultan and *Lavatera rosea.*

Where there is a choice of color, as in the case of the larkspur and phlox, make it the general rule to plant only one tone in a colony. If the latter is very large and two colors are desired, mass each; but divide the space unequally between them and make the line of division very irregular.

One of the saddest mistakes made with annuals is to plant them in mixtures. Some flowers, poppies for instance, never shock you grievously when all colors are thrown together; but zinnias, China asters and Drummond's phlox, among others, do with a vengeance. While between these extremes are instances where a mixture may be suffered, no annual can be seen in perfection unless the varieties of the species are segregated. Treated this way some of the shades of the zinnia and China aster that seem unbearable when in close contact with others take on genuine beauty. The sweet sultan, scabiosa, portulaca, nemesia, petunia and Drummond's phlox likewise show a vast improvement when the colors are separated.





Nemesia should have a place in your garden. It does best when started in pots and can be transferred later

Beware of "art" and strange shades, unless the scheme is one that needs just such tones; they are beautiful when rightly applied, but not easy to apply. The large mauve blossoms of *Martynia elegans* are difficult picture material; so are the gold-veined blossoms of salpiglossis. And there are certain shades of scabiosa and sweet sultan that it were better to discard than to use without proper thought.





Silene self sows rapidly. Cut the flowers or it will crowd out other plants

Before deciding on annuals for temporary colonies in the hardy garden and borders, get a comprehensive idea of the height and spread of the plant; frequently a seed catalogue will give the one in print and the other in picture. Thus cosmos is very tall and therefore for the background, save when used near a border edge to break a vista—though its height may be reduced by the somewhat reprehensible practice of pinning down the plant and letting the side shoots grow perpendicularly. Low annuals, like *Brachycome iberidifolia* and godetia, are for the immediate foreground or very open spaces between perennials that are farther to the rear.



Poppies are about the only annual that can be planted with species mixed, but a colony of single color is very attractive

In the placing of annuals among perennials a point always to be considered is the freedom with which they self-sow and thus become a nuisance unless watched very closely. The cornflower, larkspur, coreopsis and *Silene armeria* are as much of a pest as weeds if left entirely to their own way of thinking what their share in the population of the garden ought to be. These should have the blossoms, as they fade, snipped off with scissors—not a burdensome task if the planting is not an uncommonly large one and the work is done daily.

Where the planting of a hardy garden or border is delayed to afford time for accumulating a stock of perennials in the home nursery, annuals may serve two excellent purposes at once. Get the ground in readiness for its eventual use and then devote it to annuals entirely for one, two or three years—as circumstances

(*Continued on page* 410)



This view of the garden shows what a pleasant effect was obtained by vistas through an opening in the wall suggestive of cloisters. No elaborate horticulture is attempted, the floral effects being restricted to vines on walls and trellises, and urns filled with ferns and an occasional geranium

Embellishing the Back Yard

HOW CITY YARDS MAY BE IMMENSELY IMPROVED BY THE USE OF BRICK AND PLASTER AND THE ASSISTANCE OF GARDEN FURNITURE—SUBSTITUTING ARCHITECTURAL BEAUTY FOR THAT OF BLOOM AND BLOSSOM—THE VALUE OF VINES

BY VIOLET GORDON GRAY

Photographs by the Author

FOR years the city back yard has been placidly accepted as hopeless. A convenient spot, it is true, in which to keep the household garbage-pail and ash-barrel, but certainly not a place which could ever be expected to lay the slightest claim to the aesthetic. Lately, however, the city householder has ceased to shrug his shoulders quite so calmly, for the dreariness of his little yard is affecting his nerves. Besides, he is realizing that there is a remedy; that his tiny scrap of ground may be made to yield almost as much real pleasure and refreshment as the half-acre of his suburban brother.

Of course, for the city dweller there can be no great, glorious beds of brilliant-hued flowers sprawling in the sunshine, no massive clumps of shrubbery, no wide-spreading trees. His garden must necessarily be compact and formal—specialized. Paradoxically enough in its meagerness and formality lies its charm, a quaint charm reminiscent of the little cloistered gardens that are so frequently to be found in the old monasteries.

Even more than the country garden the city one is dependent for success upon thoughtful and judicious planning, rather than on the mere expenditure of money. Where space is so restricted every detail is of importance, and a false note is disastrous.

The background of the garden, its surrounding walls, are the first and greatest problem. A high wall built of handsome, dull brick, with the quaint coping we find in Kate Greenaway's pictures is considered the ideal thing by many experts, but in the long run the ordinary brick wall, its crude redness hidden under a coat of plaster tinted in soft, old ivory tones, may be even more satisfactory and certainly affords an artistic background for vines and shrubs.

If the garden is surrounded by a board fence this may either be painted the conventional white with the green lattices of the French garden, or, more practically, be stained a soft brown.

A few well-chosen pieces of garden furniture are needed. Beautiful reproductions of the old-world marble benches and



A back yard of hopeless outlook had its very limited space transformed from unsightly bareness to considerable attractiveness by the use of garden furniture and ornaments and the judicious planting of vines. The walls are brick covered with plaster

urns can be had in concrete, which is not only so much cheaper, but much more suitable for our rigorous American climate. The cement does not become weather-stained, and its gray tones are always charming.

The planting of the garden depends, of course, on individual preference. Blooming plants, however, are hard to raise where sunshine and air are limited. Evergreens, shrubs and ivies will prove more practical, with, perhaps, a few potted flowers from the florists to lend color.

The accompanying illustrations show what has been done by the Arts and Crafts League of Philadelphia with the yard in the rear of its shop and studios. Quaint and beautiful, it is also extremely practical and has some points well worth considering.

The low trellis, stained in dark brown, and covered with ivy, is delightful against the brick and plaster walls. At intervals the trellis is divided by posts which serve as pedestals for cement and mosaic jardinières. An arbor at the back of the garden obscures the high board fence separating the garden from the alley, and gives an air of distance.

In the background is a little old brick court belonging to some of the League studios. This is connected with the main garden by an arched opening which, with its columns, has a most alluring air of mystery. In front of the archway the narrow pebbled path is enlarged into a good-sized square.

Across the pebbled square from the arch is a wall fountain and a concrete bench. Several flower urns on pedestals of good design are extremely decorative.

No elaborate horticulture has been attempted. Instead the floral effects have been wisely restricted to English ivy clambering over the walls and trellises, urns filled with ferns and ornamental evergreens, and here and there a brilliant-hued geranium making a gorgeous splash of color. In spring the path is bordered with crocuses and hyacinths.

To all those who know and visit the Arts and Crafts League the garden is a delight. Where the League has pioneered, we hope that others will follow, and that the neglected back yard will soon be a thing of the past.

There are many cases where the formal treatment is adaptable to country as well as city gardens. The pergola should lead to a summer-house, and where this is of old, damp woodwork, some dry, comfortable concrete structure of simple design, floored with brick and roofed with tile, can well be substituted. Here formality and the use of architectural ornament give unusual and artistic results. Again, where the serving-yard is separated from the garden by a wall, arches will give the most attractive vistas—and the walled-in garden is by no means unusual in the country. In fact, people are growing more and more to appreciate the advantages of this type, especially in the South and the Southwest, where it forms a practical out-of-door room to the house and can be used throughout the greater part of the year. Here the enclosed garden can easily be made to conform to the attractive type of the Spanish mission, and the ideas that have been employed by the League can be varied in an infinite number of ways, all of which may have equal artistic possibilities.

Success with Asters

HOW TO PLANT AND CARE FOR THIS GREATLY IMPROVED ANNUAL SO AS TO HAVE A WEALTH OF BLOOM EXCELLENT FOR CUTTING — THE ASTER ENEMIES AND HOW TO DESTROY THEM

BY NINA R. ALLEN

Photographs by Nathan R. Graves



A single aster

THE aster, always deservedly favorite among the annuals, has of late years been so wonderfully improved that it is especially desirable in all gardens. Its evolution from the single type almost like our daisy parallels that of the chrysanthemum, and today it grows almost as large and showy, many single blossoms being almost six inches in diameter. The colors are remarkably diversified, and the plants grow vigorously even when started out-of-doors. There are a few hindrances to its growth which may easily be overcome, provided only that proper and consistent care be employed.

Good asters may be grown even in soil naturally poor if one goes about it in the right way. Indeed, asters were produced by the author in new ground, which in early spring was almost as hard as a sidewalk, being a fine gray sand that bakes in the sun to a brick-like compactness; and it was acid, besides.

This is how we did it:

When the bed was marked off, the ground was heavily covered with lime. This was dug in, and the soil was left unused for six or seven weeks to be acted upon by air and rain. Next, grass-clippings which had been heaped up and allowed to decay until of the consistency of rich black earth were spread six inches deep over the surface and spaded in. We did this some two weeks before the young aster-plants were brought from the seedbed to their permanent quarters. Once or twice during the season, the plants were liberally watered with soap-suds, care being taken to put the water at the base of each plant and not on its leaves.

The season of 1911 was very unfavorable, as the early months were hot and dry. But August brought plentiful showers, and the asters, which had been standing still through June and July, shot up with wonderful rapidity. When budding, sheep manure of a good commercial sort—some is much adulterated—was dug in about the plants; and this, with more showers, produced many blossoms, most of which were fine in form, size and coloring. Wood ashes would have been a good tonic for them, but these plants had to do without it.

I have always raised asters under the most adverse conditions, namely in sand. Where there is sand, there are millions of ants, and where ants do congregate, there are the root-lice to be found —aphides is too good a name for the horrid things. Only one plant is more difficult to grow in sand than the aster, and that is the rose, especially the fragrant rose. To attempt the latter is futile; but the aster problem can be solved. And who does not want asters, if attainable?

Asters like a soil similar to woods-earth. Woods-earth, even if obtainable, is liable to be infested with snails and slugs which will destroy the plants.

Dig up the aster beds or borders in autumn, spading in grass-clippings mixed with wood-ashes, and in the spring you will have a soil congenial to asters. Then, six or eight weeks before using, lime the bed heavily, spading it in well, and you will not be likely to have trouble with root-lice. If, in spite of this precaution, they should appear, apply wood-ashes to the ground round the main stems, but not so as to touch them; and water with soap-suds. Repeat, if necessary. It is well to examine the roots of young



Branching asters are long stemmed and large sized. This is an early sort that comes in rose, lavender and white



The Victoria type may be had in all colors, is free flowering, and bears many flowers on a single bush



Truffaut's Peony Flowered Perfection is a double variety with large and incurved petals



The variety Violet King bears extremely large flowers with strongly incurved petals



Crego's aster is almost as large as a chrysanthemum with flat petals gracefully curved



Semple crimson aster is of the branching type, but an excellent and large flowered form

asters before transplanting, and if any of their white or greenish-blue enemies are present, dip them into a bath of soap-suds before setting out the plants. Wood-ashes and Ivory soap-suds provide a sovereign cure for the ravages of these creatures so ruinous to the blossoms of the Composite family, for which they seem to have an affinity. I have seen half a dozen other members of that vast order, when grown in sand, affected by these pests, although not suffering in so great a degree as the aster.

One year, having forty or fifty asters that showed unmistakable signs of root-lice, I took up the plants and found the roots so completely covered with the unpleasant white objects that the crowded aphides looked like beads on a purse. I sprinkled the roots with flowers of sulphur, and put the plants back. They soon recovered from their removal, lost their sickly appearance, and produced perfect blossoms. Late in the fall I examined the roots. The aphides were still there, but they were dead ones. The sulphur had worked havoc in their thriving family.



The Ostrich Feather is particularly interesting for its delicacy and light, wavy, twisted petals

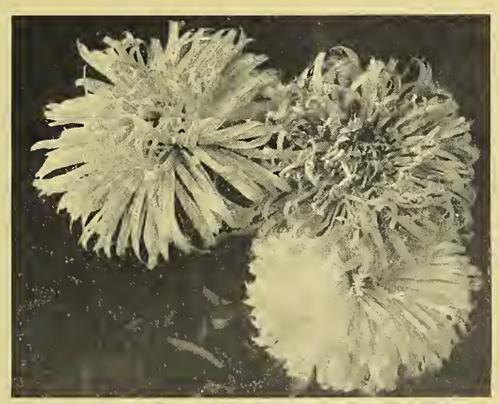
A tousled appearance of the blossoms, or arrested development in color or form of flower, is usually an indication of root-lice. But signs sometimes fail here as elsewhere. The aster, which endures transplanting wonderfully well, resents even slight interference with its roots; and on one occasion I found only a big angle-worm coiled among the roots, while the symptoms pointed to the presence of aphides.

The aster disease or rust gives to the entire plant a sickly look, with brown or orange spots beneath the leaves, where the tissue has died. Avoid all except the oldest manure; lime the ground if sour, apply wood-ashes as a sweetener of the soil and a tonic to the plants, not using either too liberally at any one time; spray the plants with Bordeaux mixture. This should be used on the first appearance of the trouble, better before, if it is feared. Repeat the spray every week or ten days, taking care to reach the underneath side of the leaves. For best results, apply when freshly made. To make one gallon, dissolve separately one ounce of copper sulphate and two ounces of fresh

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Favorite has flat outside rays with the center florets delicately cleft, and is an interesting type



The rays on Hohenzollern are strap shaped except at the center, where they are incurved and twisted



A quilled form of the Daybreak aster. Another resembling this is the Needle of the Victoria type



Complete Directions for Spraying



FULL INSTRUCTIONS IN DETAIL AND TABULAR FORM
OF HOW TO COMBAT GARDEN PESTS AND PLANT DISEASES
— WHEN AND HOW TO ACT — DIAGNOSING FLOWER ILLS

BY F. F. ROCKWELL

ABBREVIATIONS—AL—Arsenate of lead; PG—Paris green; H—Hellebore; Nic.—Nicotene preparations; MO—Miscible oil; KE—Kerosene emulsion; W—Water, hot (for dipping); BM—Bordeaux mixture; LS—Lime sulphur; AC—Ammoniacal solution copper carbonate; SF—Sulphur, flowers of (for dusting). a—After; b—Before; d—Days; f—Follow up in; B—Blossoms; O—Open; F—Fall.

SPRAYING TABLE

INSECT OR DISEASE.	ATTACKING.	REMEDIES.	REMARKS.
HOUSE AND FLOWER GARDEN			
Aphis	Various plants, mostly indoors	Nic.; KE	Two or three applications several days apart will be necessary to get the plants clean; avoid shade, dryness and crowding.
Aster-beetle	Asters mostly	AL, strong	Usually appear quickly in large numbers; quick work is necessary to save the plants.
Mealy-bug	Coleus, soft-wooded plants, inside	KE; W	Hide in leaf axils; if only a few appear kill with match stick and alcohol.
Red-spider	Roses and other plants, indoors	Syringing	Avoid dry atmosphere; apply water with as much force as possible several times a week to foliage.
Rose-beetle	Roses, out-of-doors	AL; PG; strong	Use hand picking into can of kerosene and water in connection with spray.
Scale	Ferns, palms and hard-wooded plants	KE; W	Dipping is most effective treatment; rinse carefully afterwards.
Thrips	Various, mostly outdoors	AL; PG; KE	Very small; they eat the leaf epidermis leaving the skeleton.
White Flies	Various, mostly indoors	Nic.; KE	
Mildew, powdery	Roses and others	SF	Avoid any sudden shock, such as a cold draft from a window, etc.
Leaf spot, rot or rust.	Various	BM	Before spraying remove and burn all affected leaves or plants carefully.
VEGETABLE GARDEN			
Aphis	Melons, cabbage, etc.	Nic.; KE	Spray must reach under side of leaves, especially of melons; several applications three or four days apart.
Asparagus-beetle	Asparagus foliage	AL	Late in summer all vines should be cut and burned.
Caterpillar	Cabbage, tomato and tobacco	AL; PG; H	
Cucumber-beetle	Cucumbers and vines	AL; tobacco dust	Use BM in connection with LA; tobacco dust as preventive.
Cut-worms	Cabbage, tomato, onions, etc.	AL, in bran	Make a poisoned bran bait by mixing 1 qt. wheat bran, one teaspoon white arsenate, one teaspoon cane molasses.
Flea-beetle	Tomato, potato; cabbage, turnip seedlings	AL; tobacco dust	Especially injurious to seedlings of cabbage, turnip and radish; tobacco dust as preventive.
Potato-beetle	Potato, eggplant and tomato	AL; PG	Especially injurious to eggplant; hand pick as well as spraying.
Squash-bug	Squashes and vines	KE; tobacco dust	Tobacco dust as preventive as soon as plants get above ground; kerosene emulsion for young bugs.
White-flies	Tomato, cucumber, etc.	KE; Nic.; tobacco dust	Tobacco dust as preventive as soon as old flies appear; injury is done by the young Nymphs.
Mildew	Cucumber, lima beans, etc.	BM	Keep vines sprayed after middle of July with BM as preventive.
Blight	Cucumbers, potatoes, etc.	BM	For cucumbers, same as above; for potatoes, begin spraying when about six inches high, and keep new growth coated.
Leaf spot, rot or rust.	Beans, tomatoes, celery, etc.	BM; AC	Keep covered with BM after the middle of July; on celery late spraying should be done with AC, which does not stain the foliage and stalks.
ORCHARD AND FRUIT GARDEN			
Apple-scab	Apple, pear	BM; LS (summer)	Three times: b B O; a B F; f 14 d.
Blister-mite	Apple, pear	LS; MO; KE; strong	Spray thoroughly in late fall or early spring.
Bud-moth	Apple	AL	Twice; when leaves appear; b B O.
Caterpillar, tent	Apple	AL	Burn nests before caterpillars begin to spread.
Canker-worm	Apple	AL	Same as for Codlin-moth.
Codlin-moth	Apple	AL	In addition to spray use burlap bands on trunk for trap during July.
Curculio	Cherry, peach, plum	AL, strong	Spraying not very effective; jar trees every cool morning and catch beetles on sheet; spread beneath for several weeks after B F.
Currant-worm	Currant, gooseberry	AL; PG; H	At first appearance, usually before blossoming, spray at once. If a second brood appears after fruit forms, use hellebore.
Leaf-hopper	Grape	KE	Be careful to cover under side of foliage.
Scale, San Jose	All fruit trees	LS; MO; KE; strong	Spray during winter or early spring, covering every part of trunk and branches.
Scale, Oyster-shell	Apple and other fruit trees	KE; medium	KE, medium strength, applied in May or June, when young scale which appear like small, whitish lice, hatch out.
Black Rot	Grape	BM; AC	BM until middle of July; after that, AC. For one or two vines cover each bunch when half grown with manila "store" bag.
Fruit Rot	Plum, peach, cherry	LS (summer); BM	Keep fruit thinned so it will not touch. Gather cherries before quite ripe and spread out in a cool, airy place.
Leaf Blight or Curl	Plum, peach, cherry	LS (summer); BM	In using LS, be sure not to get it too strong.
Mildew	Gooseberry, especially foreign sorts	Potassium sulphide	Keep plants pruned to open form to allow free circulation of air.
Rust	Strawberries	BM	Keep plants sprayed during first season and until a B second season.

CALENDAR OF OPERATIONS

SPRAY APPLE AND PEAR		SPRAY CHERRY, PLUM, PEACH AND APRICOT		SPRAY ROSES.	
When leaves unfold.	With arsenate of lead combined with first strength Bordeaux; this makes one application do the work of two.	When leaves unfold.	With arsenate of lead combined with second-strength Bordeaux. The latter may be omitted from the second spraying and from the last two sprayings, if trees are in prime condition.	Before growth has started at all.	With full strength soap wash, used hot.
Three days after petals fall.				When leaves unfold.	With second strength Bordeaux.
When first worm hole is seen on tiny fruits; watch closely for this and get busy instantly.		When petals fall.		May first and on, every week.	With potassium sulphide.
Thirty days from this time.		Ten days after petals fall.		As soon as slugs or rose beetles appear.	With arsenate of lead.
Whenever small caterpillars are seen.		Ten days from this application.		Whenever aphids (plant lice) appear.	With the dilute soap wash.
The twenty-fifth of June.	With arsenate of lead alone.	Ten days from the last application.			
The fifteenth of August.	With arsenate of lead alone.				

PLANT life is much like human life—food and water must be supplied to maintain it, and sufficient artificial means of combating those things which prey upon it must be employed. There is, however, this important difference, that while many of the ills which flesh is heir to run their course and disappear naturally, almost every plant trouble will prove absolutely fatal unless the gardener uses some means of counteracting it. Furthermore the plant is absolutely unable to defend itself, and you as the gardener and also the doctor are responsible in the majority of cases for any fatalities occuring among the plants under your care.

So far the most effective method of treating plant ills, either insects or diseases, has been the use of spraying. And a series of inexpensive and effective remedies have been developed with which, if properly used, the gardener may successfully fight most of the troubles of the sorts which he is apt to encounter. It should be emphasized from the start that success will depend almost wholly upon just how seriously you take those three words. The first law in spraying, if you want satisfactory results, is timeliness; the second is thoroughness. You have got to do the work on time and do it thoroughly or you might better save yourself the time and trouble involved and trust to luck, as so far no Christian Science method of treating squash bugs has been discovered.



The compressed air sprayer is charged with a few strokes of the plunger, hung from the shoulder by a strap, and is ready for use

And, furthermore, you must make the punishment fit the criminal, not the crime; you cannot reform a squash bug by feeding him Paris green nor produce any effect on a potato bug by spraying him with Bordeaux mixture except possibly to soil slightly his handsome outing costume. In other words, some insects suck the juices from the interior of the plant, and against them poison applied to the surface is of course ineffective. Those which eat the leaves, such as the caterpillars and most of the bugs and beetles may be influenced for the better by such things as lead arsenate and Paris green—but at the same time one does not care to carry this reform as far as the family table, and therefore such things cannot always be employed, even for the insects against which they would otherwise be effective.

Do not, however, be alarmed at the amount of data which may appear at first glance to be in the accompanying table. Not all of these friends will visit you every season, and even for those against which you must guard the bill of fare need not necessarily be very varied.



Aphides infest the underneath side of the leaf in colonies of white specks

Your outfit, furthermore, does not have to be a very elaborate one, considering the amount of work you will be able to do with it. First and foremost, of course, you need a good spraying apparatus of sufficient capacity to take care of the work you are likely to have for it to do. It may range from a brass florist's syringe to a power orchard pump. For the average small place, however, for use in connection with coldframes, hotbeds and the small greenhouse—if there is one—and in the vegetable and flower garden and for a few fruit trees, the best type that I know of is the cylindrical, compressed air sprayer. Those made of brass cost a little more than the others in all the various types, but by all means get one, because with proper care it will last indefinitely, while a cheaper grade goes to pieces very quickly under the action of the erosive mixtures which have to be used in it. And if you have any trees or grapevines which will require attention get also an extension rod and a goose neck and spray nozzle. Stock solutions or material for making the following if kept on hand and used in time will answer practically every purpose. The mixtures themselves or materials for making them are all easily obtained and not expensive—arsenate of lead, kerosene emulsion, tobacco or nicotine extract, and Bordeaux mixture, and more convenient, especially when mixing up a small quantity in a hurry, one of the prepared insecticides such as Aphine or Tobaccine. All of these should be properly labeled and kept with the spraying apparatus in a place where they will be safe from children and where you may find at any time what you require for instant use.

A small sprayer of the type suggested above will be useful for so many purposes and during such a large part of the year that you should not think of trying to get along without one. You will require its services in the management of your house-plants and in the flower garden, in the vegetable garden, for your small fruits and for your few but highly prized fruit trees.

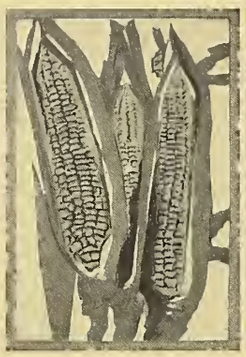
When one mentions spraying plants in the house you probably begin to wonder if it would be a good thing for the background of modern wall-paper. Many of these I maintain would be benefited by a spray treatment, but nevertheless it is possible to confine it to the plants themselves by placing them in the sink or tub, or upon several sheets of newspaper on the floor. If you can't put the spray on the plants, you can dip the plants in the spray: immerse them for a few seconds and then, after they have dried a bit, dip them in water to remove the corpses.

The three pests most troublesome in the house are aphides, mealybug and scale. A good thing to use against all three of these is Aphine, a pleasant-smelling compound containing a very minute percentage of nicotine, and cedar and pine oils. This and similar remedies kill by

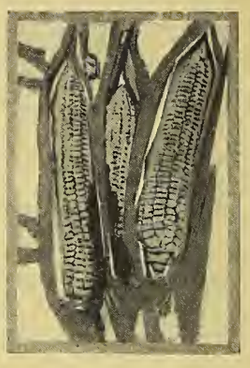
(*Continued on page 419*)



Their presence is discoverable by a shiny, oily appearance on the leaf surface



THE HUNDRED PER CENT GARDEN



THE THIRD TWENTY PER CENT., PART TWO—LATER PLANTING OF THE MORE HARDY VEGETABLES—CROPS THAT NEED SUPPORT—SPECIAL FERTILIZERS—WEEDING AND HOW TO DO IT

BY F. F. ROCKWELL

Note: Heretofore the home garden has been looked on by many people as more or less of a hobby deserving only as much attention as one usually gives to the pursuit of recreation. That it deserves to be taken up seriously, studied in all its details and developed to the limit of its efficiency is a new presentation of the subject How to have the very best garden possible on a business basis is the theme of the present articles, although they are also planned to aid those who can give but limited time to the garden's cultivation. They take up carefully and practically one detail after another in natural succession to the completion of the hundred per cent. garden. The first three articles dealt with the sowing of seeds indoors, solving the plant food problem and the planting of early vegetables, appearing in the February, March and April issues. The fourth twenty per cent. will deal with the cultivation of the garden. EDITOR.

THE directions given in the preceding article left the planting of the vegetable garden well under way, and all things which remain to be planted are of two sorts—the "tender vegetables," and the succession and late plantings of hardier varieties whose first crops have already been started.

These must be treated carefully, for the enthusiastic beginner is likely to be in a hurry to get the balance of his planting done and be able to congratulate himself that he has got the whole job finished. As a matter of fact a good gardener is never done planting. There are a number of things such as lettuce, radishes, beans, beets, turnips which, in order to procure the very best quality in the product, he knows he must plant more or less continually throughout the whole season. And then there are in July late turnips from seed, and cabbage, cauliflower and celery plants to be set out—and possibly on the Fourth of July a last planting of Golden Bantam sweet corn. Along in August, when it begins to grow a bit cooler again, some early peas such as Gradus or Latonian should be planted for a late fall crop; and still later, onions and spinach for wintering.



Adequate supports for tomatoes are easily made by nailing laths or similar narrow, light pieces of wood across stout garden stakes at right angles.

Nevertheless, there is of course, a "planting season" and it is the second period of this, covering May and early June, that constitutes by far the most important feature of this month's work in the garden. For the convenience of the person with a small garden and doing most of his work after business hours and on Saturdays, we will plan this work for four Saturday afternoons in May, though of course the actual week day makes no difference.

You may remember that the fact was emphasized that you could not be too early in getting your cabbages set out or your onions planted. Now the beginner who is apt to be over cautious in these things is just as likely to be too much in a hurry with his peas, tomatoes and other tender vegetables. He should realize, however, that the difference between the hardy and the tender vegetables is not a difference of dates on which they should be planted, but of their nature and requirements—a "race" difference, due to the climates from which they have been brought. Hardy plants thrive best in the cool, moist weather of late spring or early fall. Tender ones which are naturally tropical or subtropical, are "heat lovers" and must have warm weather before they will begin to grow properly. Absolutely nothing is gained by planting them until the conditions which they require exist, whether this be on May fifth or June fifteenth. You should be guided by the season—by the blossoming and the leaving out of the trees rather than by the calendar. In fact, in case of a backward season, tender vegetables that are set out or planted two or three weeks apart will begin to bear at about the same time—unless, indeed,

the first lot is not so checked and set back by unfavorable conditions that the later planting will outstrip it both in earliness and yield.

For reasons just the opposite you should not be too previous with your plantings of late crops such as fall cabbage and cauliflower, or late peas. The last, for example, will not begin to thrive until the longer and cooler nights begin to return and little or nothing is gained by planting them ahead of time. On the other hand, however, too long a delay in either case will mean a shortening of the season or possibly a loss of the entire crop through lack of time in which to mature.



Beans need light and carefully trimmed poles from six to eight feet in height and with "arms" and crosspieces twelve to eighteen inches apart

There is another difference between most of the crops which you sowed in April and those to be planted during May. Under usual circumstances, to obtain the results with the latter it will be necessary to give special enrichment to the soil in the "hill" or the furrow. And in passing, just a word of advice about "hills." I have already explained that this word gives rather a wrong impression to the uninitiated, as with modern methods of using level culture, almost without exception the "hill" in the garden has practically disappeared. It made much more work and wasted much more water than level cultivation. Furthermore, with modern tools it is much easier to care for a crop that is planted in rows than in hills, and for this reason potatoes, corn, cucumbers and even such space coverers as squashes and pumpkins which were formally planted in hills are now sown in continuous rows—all the cultivation except a little with hand hoes being given in one direction.



Brush can be dispensed with in the modern garden by substituting rows of chicken wire which are much neater in appearance and more easily kept in order

Nevertheless, the term "hill" still sticks, and hereafter, therefore, I mean to make use of it in giving directions for planting pole beans, corn, cucumbers, pumpkins, squashes and tomatoes and also late cabbage and cauliflower. Unless the garden is made very rich indeed, richer than most home gardens are, it will be very desirable after marking out the space for these crops to make results more quick and certain by giving an extra application of manure or fertilizer in the hills or to the row directly under where the plants are to go. If you elect to use manure for this purpose, select the most thoroughly rotted and pulverized that you can obtain. It will not do to have it green and lumpy, nor should it be too rich and strong—a mistake which over anxious beginners are very likely to make in preparing their soil for plantings of this nature.

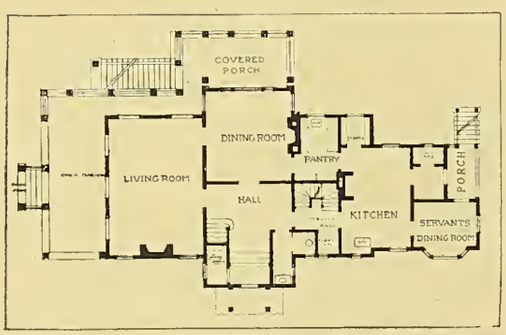
Hen manure, which is very rich in nitrogen, is a favorite material for this purpose and gives very satisfactory results if it is in proper condition, i. e., dry and well pulverized. If it is sticky and lumpy it would be better not to use it at all. I have found that the best way of using all animal manures of this kind is to reduce them by the addition of water to a semi-liquid state, in which condition they can be poured from the spout of an old watering can or from an old pail in small quantities: In this way they may be much more thoroughly and evenly distributed.

Formerly I used manure in this way quite extensively, but in place of it I now use altogether commercial fertilizers, because they are much more easily to be applied and obtained, and are much more uniform in their content of plant food. By "commercial fertilizers" I do not mean the kind that you can get ready prepared for any particular crop that grows, put up in hundred pound measures in bags. The employment of these

(*Continued on page 426*)



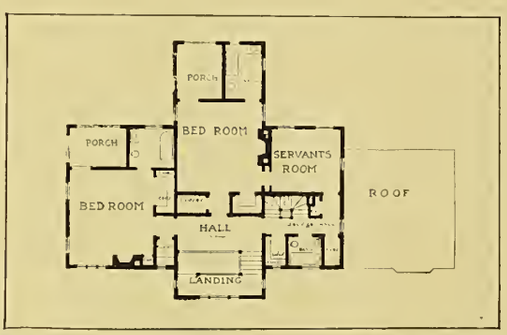
In placing the Crittenden house, the architect took advantage of an irregular situation. The house is placed on the edge of a sharp declivity and the main rooms all have the benefit of an attractive outlook. The house is provided with a terrace opening onto the garden and which becomes a covered porch on the dining-room side



The question of porches is adequately taken care of without shutting off light or spoiling the design



The driveway entrance is unpretentious but attractive. The broken stone flagging is a fitting feature in this situation



The landing at the upper hall opens on a balcony through large French windows

THE HOME OF MR. WALTER H. CRITTENDEN,

Parker Morse Hooper, architect

A RESIDENCE AT CORNWALL, NEW YORK



The dining-room is strictly a summer room, and with its light enamel and flowered paper is cool but bright. Wide French doors open onto the veranda so that in warm weather the porch may become a dining-room annex



It is not often that such care is given to the hall treatment as in this house. The wide, open spaces spread an air of welcome and add greatly to the coolness of a summer house



Above stairs an Elizabethan motive has been made use of in the balusters of the landing and the upper hall, and there is an effective use of ornament on the newel posts



Inside the House

Timely Suggestions and Answers to Correspondents



The editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope

A Novel Coat Hanger

THERE is a new and rather attractive looking hanger for coats, hats and other articles of wearing apparel usually in evidence in a hall or entrance, that is not only ornamental but has the advantage of occupying small space and is therefore particularly suitable for bungalows or apartments where every inch may count.

The hanger is of brass and so substantial in construction as to be thoroughly practical even for the heaviest garments, provided, of course, that it is securely attached to the wall when originally put up. The design shows a heavily veined leaf on which is a butterfly with slender and gracefully curved wings. The leaf, which forms the holder or back by which the hanger is attached to the wall, is provided with five holes for screws, and there are practically four strong hooks for garments, two formed by the tips of the wings and the other by the "feelers." For the sake of convenience the wings are fastened on with hinges so that they may be turned at any angle. In spite of its four substantial hooks the hanger is quite small and unobtrusive in appearance, the leaf being only six and one-half inches long, and each wing measuring twelve inches from the hinge to the tip.

Pressed Flowers on Panels

VERY original and artistic decorative panels can be made from real flowers and leaves as follows: Take daisies, pansies, maple or chestnut leaves, and other flowers and foliage according to your fancy, and dry them. When they are thoroughly dry, iron them lightly with a flat iron on which a little wax is smeared. Then arrange them artistically on a polished wooden panel of a light color, fixing them in place temporarily with pins. Next with a pencil draw their outlines on the wood so that they can be exactly replaced. Now take them off, and with a brush coat them with copal varnish. When dry, coat them a second time, and even a third if necessary. Finally put the flowers back on the panel in the pattern already marked, and glue them firmly to the wood.

"A. C." and "D. C." on Electrical Apparatus

MANY a person wonders what "A.C." or "D.C." means when stamped on electrical apparatus. "A.C." means that the article is suitable for use only with "Alternating Current," while "D.C." means for use solely with "Direct Current." Alternating and direct current are two systems in use for the distribution of the electric current of to-day. Never use an "A.C." apparatus on a "direct current" supply of electricity, or a "D. C." on an alternating supply. Find out when buying or renting



This strong yet decorative coat hanger occupies little space on the wall

a new home which system is in use in the town or city, and do not risk using (as do so many people) apparatus you may have on hand without being sure it is suitable. Fires have been caused by lack of this precaution.

A Good Dust Mop

I made myself a dust-retaining mop for hardwood floors by saturating with crude lemon oil one of the fiber mops sold for cleaning purposes. The mop was allowed to soak in the oil for several hours, then partially dried, when it answered every purpose of a dustless mop. Crude lemon oil is said to be one of the best mediums for the cleaning of hardwood, and costs only from ten to fifteen cents a quart, according to locality. Diluted with one part of turpentine it provides one of the best of furniture polishes, and at very little expense you can get a good supply.

Rust Removal from Gas Ovens

TO remove rust from the lining of your gas stove oven try raw linseed oil, rubbing it in well with a stiff brush. Many loose particles will come away with it, and two or three applications will result in a smooth surface suitable for the application of a coat of aluminum paint, which will renew your old oven. To prevent rust forming when the stove is new form the habit of leaving the doors wide open while the oven is cooling, which prevents the formation of moisture.

Interior Decorating Suggestions

AS the result of an effort to obtain a novel rather than a fine effect, or by a reproduction of plans followed in previous work that may have been successful, modern decoration constantly shows serious faults in design.

The interiors of many homes belonging to the middle and richer classes suggest a showroom or shop-like appearance rather than a living place, and lack a sense of individuality and homelikeness.

Decorators are prone to follow certain and fixed treatments and combinations without sufficient regard for surroundings. This is especially noticeable when the house decoration and furnishing is left to the decorator's own judgment and taste, as is frequently done by people who have homes to furnish and lack ability or training in decoration.

Most decorators have certain color schemes and estimates which vary in cost to suit any customer. These are used over and over again, the detail occasionally varying with the size, shape and location of the room. But with decorators who fail to recognize the importance of changing their suggestions, it matters little whether there is an east, west, north or south exposure. The result is that in the same house where various decorators have been employed, it is easy to notice and distinguish work of individual decorators, so closely do they adhere to fixed rules and the precedent of previous satisfactory work.

For dining-rooms, libraries and halls, New York decorators are showing tapes-

tries for covering walls. A very fine effect is easily attainable, and that without much ability or experience, because these tapestries are woven and sold by the lineal yard. They can also be procured in various widths and designs from three feet to six feet high. The tapestry is tacked to the wall, or placed on a frame and finished with a gimp or wood molding, and it fills the space between the wood dado and the ceiling.

The tapestry is put up in one length, spaces being cut out to allow for windows and doors. These wall tapestries are best procured direct from upholstery firms or establishments that import direct and sell to the individual. Buying from these firms, the intermediate profit of decorators is saved, and there is a better assortment to select from.

The coloring and design of excellent patterns are reproductions of the Tapisserie de Bruges. One especially good one is designated Brabant tapestry. It has a design about twelve feet long, the width being six feet. This is copied from the Gobelin tapestry designed by Chas. Le Brun during the reign and under the patronage of Louis XIV. It represents a woodland scene with running water in form of cascades with a background of distant, fleecy, cloud-capped hills. The colors are soft shades of blue, green and some wood colors that harmonize splendidly with oak or mahogany woodwork. This tapestry is in stock as narrow as forty inches wide. To complete a room with this wall tapestry, the curtains, carpet and table covers should be self-colored or plain shades, which could emphasize the blue, green or brown in the wall tapestry according to taste. The first two colors would be best with mahogany, and any one of the three would look well with oak woodwork.

Plain or figured Imperial velours make handsome curtains and table covers, especially when trimmed with one of the tapestry borders about six inches wide, made for use in combination with the Brabant wall tapestries.

To decorate a wall with tapestry, the first cost is more than paper hanging, but, in view of the need of frequent renewals of paper and the trouble and inconvenience caused thereby, it is economy in the long run. Moreover, the best paper never compares in richness with even a cheap tapestry, and tapestry, exactly opposite to paper, seems to improve with age.



The figured paper detracts from the effect of the otherwise attractive curtains



Ornamental sticks for supporting plants may be had in these curious forms

Flower Sticks

FOR the amateur gardener who has an eye for the picturesque there are curious little flower sticks topped by carved wooden figures of little men and women and birds, that are useful for tying up plants in need of temporary support. Although the idea originated among the Bavarian peasants, and the figures themselves are quite as foreign looking as one could possibly wish, the sticks are now made in this country and are not at all expensive or difficult to secure. They are painted in all sorts of gay colors, bright reds and yellows and greens that are guaranteed waterproof, while the hats are black and ornamented with tiny feathers.

The sticks are made with sharp pointed ends and are from eighteen to twenty inches high, so that they can be used for tying up plants of quite good size. Even if not an absolute necessity they will at least lend a bit of humor to an otherwise perfectly prim and proper garden bed.

Hanging Window Curtains Effectively

THE two windows illustrated on this page show how differently pretty curtains can be hung, making or marring a room by their arrangement. The little window with the ruffled under curtain and the flowered cretonne outside, should be attractive and make a pretty setting for the window itself, but it is not. In the first place, the figured paper detracts from the artistic value and should be used only with plain draperies.

The figures in curtains and paper do not harmonize at all, and take away the restful effect of the room. If they had been put up at a window where the paper was perfectly plain the whole effect would have been changed. The outside hangings are too full. Half the width only should have been used.

Note the difference in the alcoved recess in the living-room of the Colonial type. Here the bright colored cretonne curtains do not take away from the dignity of the room, but rather add color and cheer, giving a most artistic effect which is heightened by the sofa pillow on the window seat.

Cretonne of all sorts and colorings is found in most artistic effects. There are to-day nearly a hundred varieties of domestic manufacture which can be purchased for as little as fifteen cents a yard. It is often hard to tell it from the real chintz. It is a most inexpensive hanging as well as an artistic one, for you can often pick up odd remnants at reduced cost, which will often do for window hangings.

A Home-made Hamper

One of the things especially needed about a home is a hamper, and for this a simple box may be utilized to the satisfaction of all members of the family. The home-made hamper needs less space than one of those purchased. Take a box three feet long, two feet wide and about 30 inches in height. Cover with table oilcloth (blue looks best when the hamper is intended for the tiled bathroom), and attach handles of nickel. The inside of the box is enameled white, and the first division is used for stockings and flannels, the middle and largest for table and bed linen, towels, etc., and the third for lingerie and other wearing apparel.

There can be a pocket of the oilcloth fastened to the inside of the cover.



Here the bright colored cretonne curtains do not take away from the dignity of the room



Garden Suggestions and Queries

The Flower Garden



CONDUCTED BY GRACE TABOR
Author of *The Landscape Gardening Book, The Garden Primer, Old-Fashioned Gardening,* etc.

MAY is the month of color, of tremulous softness, of delicate touches, of the year's adolescence. Obviously it is the expression of one of Nature's moods that is difficult to catch; and in all the year there is none rarer or lovelier.

It is in the garden's color scheme, I think, that we must undertake to help such expression. Of course, you will guess at once that the softest colors are the ones I am about to suggest—the pale lavenders and mauves, the faint, blush pinks, the silvery blues and the delicate yellows to combine with the tenderest, softest green of the year. Never a bright shade of anything should be allowed to creep in anywhere during the month of May, lovely though such a shade may be in itself. The time for such as these is not yet; they must wait.

Appropriate Flowers for May

NO separate place needs be set apart for the realization of this idea; the entire garden may be treated to it, by judicious planting, so that over it all there shall rest, during the month, a delicacy and misty, shadowy refinement of color. It is simply a matter of putting clumps and masses of the plants which are introduced to produce this effect, where their green will later furnish background or suitable foil for the subsequent bloom of other things.

A selection for the May garden, or the May mood of the garden, should contain masses, or at least one great mass, of the windflower, *Anemone nemorosa* probably being the most satisfactory choice; English daisies—*Bellis perennis*—in the pink form known as "Longfellow"; *Epimedium sulphureum,* which is the pale yellow barrenwort; the German iris, *Iris Germanica,* in varieties selected for their pallor and delicacy; *Mertensia pulmonarioides,* or Virginia cowslip, pale blue and nodding; forget-me-not—*Myosotis palustris; Phlox subulata* or moss pink in the opalescent shades of pinkish-white and purplish-white which almost no one ever seems to grow; and finally, early-flowering peonies in all the lovely pale shades which they show.

Of these *Paeonia officinalis, flore pleno alba* and *P. officinalis, flore pleno rosea* should be chosen; and in addition to these, *Paeonia Moutan* in the pale lavender-white and, if there is space for them, the white with rosy stripes, blush and "satiny-rose" of the catalogues. I am not giving the trade names of the latter, for the reason that practically every dealer has his own strains, and it is much better to select by color. The other method often turns out unsatisfactory and garish results.



The German irises may form a whole garden in themselves when selected with care and grouped with an eye to color effects

The Wood Anemone and Daisy

THE wood anemone in the typical form is not more than six to eight inches high, with pale, purplish-white flowers, but there is a blue-flowered variety, *Robinsoniana,* that reaches a foot in height. All wood anemones do well in whole or part shade, but this one is particularly recommended for shade. A pure white form is *Anemone nemorosa alba;* and another species, *Anemone sylvestris,* which grows to be eighteen inches in height, is very lovely, with large white flowers that are fragrant. Either or all of these should be massed in profusion, fifty plants at least not being too many for a group.

English daisies are particularly suited to edgings, and seldom are used for anything else; but a large number of them, presenting a sheet of bloom, is sufficient warrant for planting them in masses. Space and circumstance, of course, will determine whether or no they may be planted in this manner. Barrenwort is not grown as much as it ought to be, for it is a particularly interesting and delightful plant. The foliage of most varieties colors beautifully in autumn, and persists. These should not, therefore, be hidden behind other growth, but rather should be prominently placed, even though their bloom is over early in the summer.

Irises and their Selection

THE German irises form a whole garden in themselves, when selected and grouped with care. Almost any color that one may wish to have is to be found among them. "Cherion" is a lovely mauve and violet; "Gazelle" is white, with mauve edging; "Mme. Chereau" is white similarly edged with light blue. Then there is the orris root iris, *Iris Florentina,* which is as delicately lovely in white, with opalescent shadows overlaying it, as any of the most boasted hybrids. A new variety lately offered is a hybrid between the very early-flowering, low-growing *Iris pumila* and *Iris Germanica;* and this is said to be especially good, though this I cannot vouch for as I have not yet seen the plants. A creamy yellow and a "citron with pearl-colored center" are named, as well as white and a rosy lavender, all sounding as if they were especially suited for such a scheme as the one in hand.

The Cowslip, and Forget-me-not

THE Virginian cowslip and the forget-me-nots are both blue-flowering, the former being an upright growth, not especially conspicuous, yet very charming, while the latter is prostrate or nearly so, and blossoms practically through the entire summer. Partial shade suits this better than full sun, and it rather likes dampness.



Garden Suggestions and Queries

The Vegetable Garden

CONDUCTED BY F. F. ROCKWELL
Author of *Home Vegetable Gardening* and *Gardening Indoors and Under Glass*



MAY is the month for spring house-cleaning out-of-doors; that is, May as the magazines figure time, though in reality it is still April. And now you may forget the garden for a few afternoons and turn your attention to the cleaning up and repairing of the grounds. It is time to prune late-flowering shrubs. The reason you should so distinguish between the early-flowering and the late-flowering sorts, *i. e.*, those which bloom after midsummer, is that the former bear their flowers on wood of the previous season's growth, and if you prune anything but dead branches at this time, you will be cutting off buds. The late-flowering shrubs, however, such as hydrangeas, flower on new wood, and no matter how much you cut them now, you will not be sacrificing any blooms, as the flowering growth has not yet been made. Shrubs that are planted in mass will not require much pruning. Where individual specimens are grown, however, you should aim to keep them pruned to a good shape. In all cases any wood which has become broken or winter-killed should be cut away cleanly. The same is true of hardy vines.

Hedges and Trees

REPAIR the hedges. Two or three bad spots in a hedge will make the whole look disreputable and shabby. Do not wait until the later part of the season to do any repairing of this sort, but attend to it at once, in order that your patch-work will not show through the whole summer. Never attempt to fix a hedge by stuffing dead branches, prunings, etc., into a bad spot; this only makes the trouble spread, as these will kill the live growth with which they come in contact. Cut the dead spot out clean, removing dead branches and plants if there are any, and if necessary put in new ones. This may often be avoided, however, by bending a live branch or two from each side of the bad spot across it, and fastening the branches down so that the lateral shoots, which will then be forced into extra growth, will fill the gap.

Put your trees into good condition. Very frequently some of the lower branches will either be dead or almost entirely denuded of foliage, and thus spoil the looks of the tree. Cut them off close to the trunk, and if they are over an inch and a half or two inches in diameter, paint the stumps over carefully with coal-tar.

Also spray your fruit trees and take care to get the spray on the trees at the proper time. The first spray should be given to apples just before the blossoms open, while the new leaves are still coming out. The second, which is even more important, just after the petals of the blossoms fall. Use Bordeaux mixture with lead arsenate. More definite instruction in regard to how to mix and use these sprays for both apples and other fruit trees may be found in the spraying article in this number.



From the time the first seedlings appear, the surface of the soil must be well stirred up to keep the weeds from getting a start

"Edge" the drives and walks, but do not make the very common mistake of cutting back the sod for several inches in order to get a good, straight edge. This leaves an earth wall two to four inches high exposed to the drying influences of sun and wind, and ready to be broken down every time anyone steps on the edge of it or attempts to go over it with the wheelbarrow. You should cut back just as little as possible, and then with the back of a spade pound the edge down so that the grass comes directly to the path or roadway and does not terminate in a bank several inches high. If you cannot get all the holes out in this way, fill them in with new sod.

Grapevines

LOOK after your grapevines. These should have been carefully pruned early in the spring, and you will now, if you are to reap the full benefit of that care, have to see to it that the buds which start from its many dormant eyes are not allowed to grow and waste the strength which should be going into the fruiting canes that you have planned to secure. If your vines have been troubled with "black rot," which causes serious injury to some varieties, spray with Bordeaux mixture as soon as the third leaf appears on the new shoots, again just after the blossoming and before the fruit sets, and two or three times more at intervals of about twelve days. Apply the spray, if possible, just before a rain.

Starting Tender Vegetables

START tender vegetables in the frame. Everybody sets out some plants of the early vegetables, such as cabbage, lettuce, beets and so forth, while tomatoes, eggplant and peppers are always started under glass, but comparatively few people as yet start their muskmelons, cucumbers, lima beans and similar things of a tender nature in this way, although the advantage gained is just as great. Secure a number of the cheap paper pots which may now be had; fill these with a suitable soil, very light and very rich, and you can have the things well forwarded by the time it is warm enough to set them out-of-doors, and they will not require transplanting. Simply put pot and all in the soil when you get ready to plant.

Keep ahead of the weeds and get your planting done on schedule time, or as near to it as is humanly possible.

EDITORIAL

FUTURIST ARCHITECTURE

ON the editorial page of a New York newspaper there recently appeared a casual criticism of the architecture of Manhattan. It was stated that the ensemble of the city was entirely devoid of architectural unity and revealed fickle treatment, a turning from one fad to another. Furthermore, the buildings themselves were described as un-American. Prototypes of the Woolworth Building, the Madison Square Garden tower and the Metropolitan tower were cited in order to prove that the architecture was merely European grafted upon American structures. The conclusion was drawn that, despite our progress in other things, we had evolved nothing distinctively American in architecture, and that it was time for a Futurist school to appear and produce a style peculiarly our own.

Because this periodical plea for a distinctly American architecture is so persistently recurrent, and because it appears with such commonplace regularity, it might well have elicited merely the reply of a yawn. But the case is altered when the old topic reappears again under the cloak of Futurism; having a painful recollection of the example of "Futurist" architecture shown at the recent International Exposition, we must retort. That one model is beyond criticism simply because two individuals cannot argue in two different languages and establish any conclusion without resorting to physical violence. But where there may be some doubt about the function of a painting, there is not about a building. The example in the Sixty-ninth Regiment Armory fails in its function of being a dwelling. It simply wouldn't work.

While this aspect of the distinctively American architecture is before us it might be well to investigate the national styles of any country, limiting our discussion for convenience to the dwelling house. From a rudimentary shelter of sods, or hides, or bark there developed a structure better fitted to keep out the weather—the growth was simply one that showed a gradual improvement in efficiency as a protection. It paralleled the invention of tools or the appearance of primitive manufacturing skill. As with any development, come greater and more diversified wants. The primitive hut became more than a shelter; it contained certain conveniences. Later, with awakening esthetic sense, came decoration and ornament, until the homes of the people became what we find them to-day. The architecture depended upon racial characteristics, on climate, on geologic or geographical conditions. Civilization advanced with the traffic between towns and nations, and architecture was influenced by foreign ideas. Thus it is that Egyptian detail has much that is Assyrian about it; Roman much engrafted from all the states that flourished during her prime. In the domestic styles, however, the traditions of the land strongly prevailed, and there are some nations where it might be conceded that there are characteristic national types—England and Germany, or Switzerland, for instance. Even there, however, an argumentative analyst might show evidence of foreign influence or prove similarities between styles.

In America, national growth shows a marked difference. Following the previously given analogy, an American type should show characteristics of the Indian tepee. But the Indian contributed nothing. There was no development from an elemental type. These United States were settled by different races and different nationalities. Their geography and climate show an immense range of conditions. Throughout this diversified environment the process of amalgamation is going on. The land is a potential Babel, except that there speech only was confused. Here ideals, training, customs, religion—all vary; but instead of confusion there is combination rather than conglomeration. Not only New York, but the nation is the melting pot of peoples. Can we then expect a representative national architecture, a distinctively American evolutionary type, free from outside influence? It may not come until we are sure of what is American, unless the new school is to be born by partheno-genesis; suddenly, by a miracle.

And now this Futurist architecture, what may that be? According to the article aforementioned we have a right to assume this to mean an architecture built upon the creed of the Modernist school. It is to be individualistic, distinct and original; it must spring like Athena from Jove's head. Really to be Futurist the house could not be a house as we think of it—that would show slavery to tradition. It must be an absolutely new conception and free from the cramping effect of habit or rule or custom.

In the case of painting and sculpture, criticism may be turned aside by refusing to accept the terms of the hypothetical question. If one says, "This is a new art; it never existed before; it cannot be judged by the canons of other art; besides it fights canons of all sorts," he steps beyond the range of argument.

The claim, however, may be criticised. This "subjective objectivity" is either divine inspiration or it is taught by one to another, developed by theory and practice; the originator to his pupils. Some one simply assumes the province of time and change and experience; he places himself in the position of tradition. "I am greater than the ages; follow me, not them," must be his exhortation. It is clear, then, that there must be imitation in this new art; moreover that it is only an unnatural process, its machinery working exactly as art developed, except that the artificial is substituted for the real, the unnatural for the natural, a moment for an age. The very claims of Futurism to originality are fatuous. Beyond this it is retrogression to pre-Darwinian methods of thought. It would prefer the doctrine of spontaneous growth to the scientific and modern idea of evolution. It substitutes ratiocination for experimental reasoning.

Thank goodness there is something so very healthy about the business of architecture that it is fairly free from the continual eccentricities of cultists! Combined with the esthetic there is the balancing necessity of utility. The house is to be *lived* in; it has functional requirements.

One cannot conceive of any of the defensive statements made for Modernist painting similarly brought forward for architecture. "My impression of a house" may be unchallenged on canvas, but when wrought in building materials—the idea is too preposterous. Think of Futurist plumbing and heating! Yet they are considerations of the architect's art.

It is so futile to be seduced by a fad, lured by a term. The words of the appeal for a Futurist architecture are thoughtless. If there is a sensational Futurist painting and sculpture, why not architecture? New, American, different—all the picturesque features, but none of the useful ones. It is such flighty criticism that is raised against American work to-day. There is room for just criticism, but the cheap substitute continually appears instead. It is to be hoped that those good workers who are interpreting the constant change and development and new requirements will continue in their typically American work. Our architects have an ear to the ground, not an eye on the magician's crystal. They are not imitators, but constructors who some day will evolve, develop and create. Their work is not from air. Its ideals consider rather the end than the beginning. Let us forget the silly plaint for an American style in the realization that we are achieving it in process.



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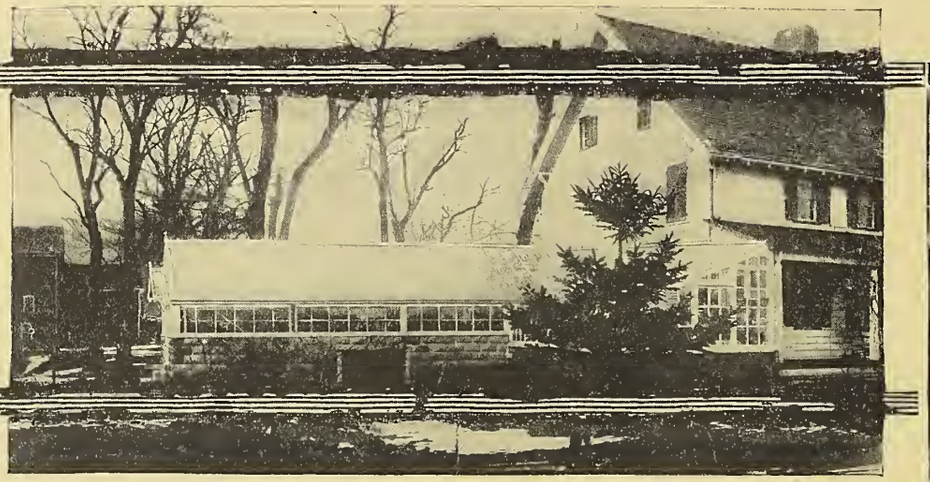
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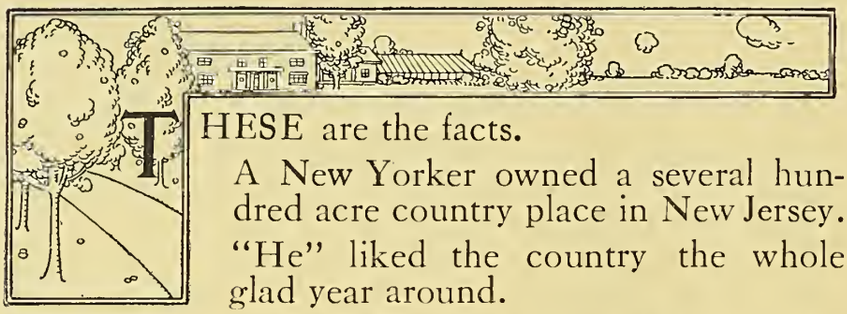


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Cut Flowers from the Fall Garden

(*Continued from page* 378)

for the brilliance of color that may be had from white through pink and red almost to black.

There is not very much to say about dahlia culture. They require primarily food and water, but there must be good drainage. Dahlias have no special insect pests to look after, and if the ordinary care of tobacco spray or whale oil soap is used, they will flourish well. There is no great hurry about planting dahlias. Indeed, one prominent grower does not begin until the first of June, and as there is an extensive amount to be done, the planting continues until almost the first of July, and yet the plants flower nearly as early as if planted in the last of April. About the middle of May is a desirable time for this vicinity of New York.

As many of the varieties are rather expensive it is worth while to assure yourself of results by sprouting the tubers for a week or ten days before you put them in their permanent location. After the soil is in proper tilth, if the tubers be covered by a thin layer of earth in about a week they will begin to sprout. The clumps may then be separated, and but one tuber with a sturdy sprout placed in a single hill. The tubers should be placed about three feet apart in a soil enriched with well rotted manure or in some cases bonemeal. The situation should be preferably a sunny one. When the plants begin to come up after the first leaves appear it is well to snip off the top of the sprout and thus form a more branching growth. For dahlias have a tendency to run to leaf or grow tall, spindling stalks that are apt to be blown over or broken down by rain. After the main plant has become well started it is often well to clip off any extra sprouts that may appear. Dahlias require staking and a large, strong stick, at least six feet long, should be provided. After the bloom is over cut down the plants and dig up the tubers and store them in a clean, dry place in the cellar.

Perhaps a few words as to the sorts of dahlias may serve to simplify the purchasing. Show dahlias are like the old-fashioned sort, round, compact and full to the center. Pompon dahlias are similar, merely of smaller size. Cactus dahlias are more loosely arranged and approach the chrysanthemum or aster in form. The petals are long, twisted and often terminate in points. Decorative dahlias have a flattish, broad petal and are quite irregular. The single type has but one row of petals about the center which is daisy-like. The so-called peony flowered type resembles the peony and is half way between the decorative type and the single broad yellow petals. There naturally are too many excellent varieties to name them all, but to-day the great variation in color and form of the cactus types makes them the most popular. The following list contains some that I have found well worth growing: Kriemhilda, a large, pure white

cactus type; Yvonne Cayeux, an ivory white form with narrow petals, starlike; Schwan, another white, beautifully formed cactus; Marathon, yellow center, shading to carmine and tipped with white, very large; Marguerite Bouchon, flowers on long stems, one of the finest pink sorts; Ella Kramer, a rose pink with orange center; H. J. Jones, another pink sort of fine form with long, narrow petals; J. H. Jackson, a favorite, standard type of maroon shading almost to black; Standard Bearer, a fiery scarlet with flamelike rays; Countess of Lonsdale, a deep salmon red; General Buller, deep red with maroon petals; Mrs. Henry R. Wirth, fine scarlet.

Decorative types: Colosse de Bellecour, well formed large flowers of white shaded purplish; Delice, one of the most famous pink decorative types, large flowers of delicate pink; Souvenir de Gustave Douzon, a very large dahlia of an orange red shade.

Among the peony flowered sorts: Geisha is a remarkably good type, large, scarlet and gold with a ring of yellow at the center; Queen Wilhelmina, a large, pure white type, and the Edelweiss, another glistening white of good form.

Among the single forms the Century dahlias are particularly fine and very large. Scarlet Century and Rose Pink Century are excellent.

With the anemones there is some care necessary for protection from cold winds. They require fresh, sandy loam with a tendency to richness. They are not very fastidious of the soil, provided it is well drained. Anemones can be planted from early spring outdoors, and have wonderful foliage and blossoms. From a great mass of dark green foliage the flowers rise on tall, slender stems and are wonderfully attractive when massed in borders. They have the additional value of some being suitable to shady places. When the bloom is over the plants should be cut back and some light mulch protection spread over them and held down with brush as they need some protection to keep from being winter killed.

The wavy petals of the *anemone japonica* are in a wonderful variety of color and shades, especially of reds and pinks; many are mottled and shade to purple. Some of the best varieties are, Queen Charlotte, a large, silvery pink; Alba, a clear white; Whirlwind, semi-double white; Kriemhilda, rose pink; Prince Henry, deep, rich pink; Purpurine, purplish rose.

With these three mainstays of the fall garden one may well combine late planted gladioli, salvias, calendula and cosmos. Cosmos should not be neglected. The new Lady Lenox is a wonderfully attractive flower of much greater size than common heretofore and appearing earlier. With these varieties the householder need look no further for flowers within doors. His needs already have been met completely, for the types that have been mentioned are sufficient even for the most enthusiastic flower grower.



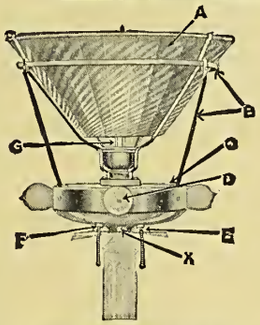
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A Garden Enemy and How to Fight It

(*Continued from page* 373)

disease being the blackening of the outer tissues about the base. Later in the season lesions appear on the stems toward the top where the disease runs in from diseased buds or leaves as described below.

After the leaves have expanded sufficiently to expose tiny buds the next form of the disease to be noted begins to appear. This is the "blasting" of the very young buds. The affected buds, at this time little larger than peas, turn black, cease to develop and wither. Often one or two of the leaflets just below the bud turn brown and wither. It is usually the main bud on the stalk that is thus first affected. Frequently secondary buds on the same stalks are also affected and the disease extending down the stem may involve a number of branches and leaves. There is commonly no external evidence of the fungus on these early affected buds, but if the weather is moist and cloudy or the buds be placed in a moist chamber the spore stalks of the parasite will quickly appear, covering the blackened buds and stems with the characteristic gray-brown felt.

Buds which escape this early infection may succumb later, for they are subject to attack up to the time they open. The larger buds usually show a browning of the outer green covering at some point at the lower side near where they are attached to the stem. This brown lesion spreads rapidly upward and around, involving the entire bud and usually extending down the stem for an inch or more. The parasite penetrates throughout the petals and inner organs of the bud turning them into a moist brown mass interwoven with the brown moldy mats of mycelium. On the surface of these rotted buds the fungus produces a dense growth of spore stalks giving the characteristic gray-brown felt. This form of the disease is commonly known as the "bud rot." Even the flowers when fully expanded may be attacked and destroyed, and it is not uncommon to find the carpels themselves, after the flower has fallen, attacked and rotted by this parasite.

The blight of the leaves, which is another symptom of this malady, usually becomes most pronounced after the blooming period, though not infrequently plants show this symptom before flower buds open. The lesions on the leaves usually appear first at the tip, extending back into the blade in a V-form. The diseased parts first lose their green color and become water-soaked in appearance, rapidly turning to a dark brown, which soon fades to a light yellowish brown. The entire leaflet may become involved, though usually not more than a third of the upper part of the blade is affected. The lesions on the leaves are often strikingly marked by concentric bands of alternating light and dark brown colors. This same character is even more marked on lesions on the stems, especially those extending down

from diseased buds or at the upper part of lesions on the older stems at the base. The lighter bands on the stem lesions may often be nearly white.

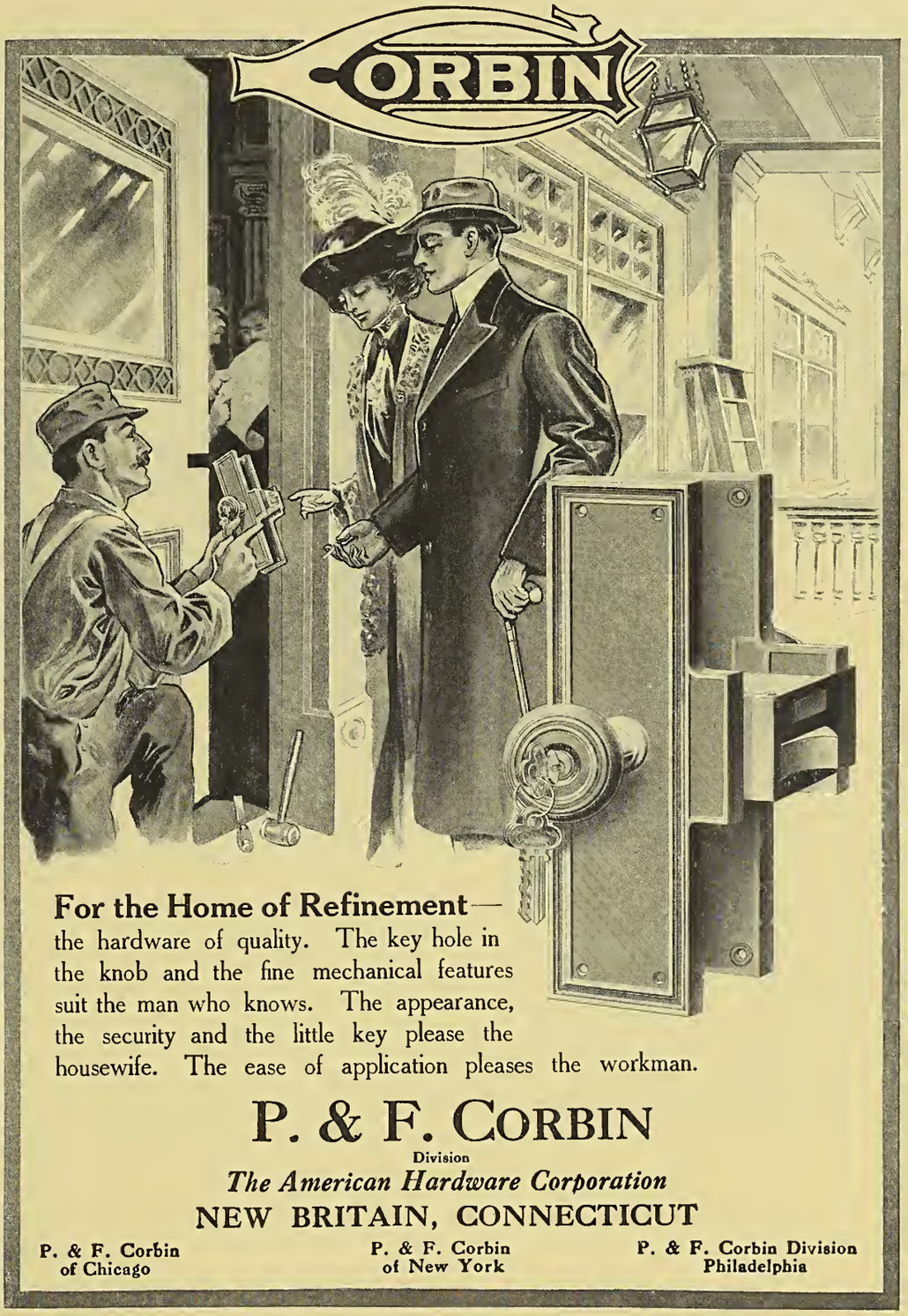
It would appear then that we have on peonies in this country a disease very similar in symptoms to one more or less prevalent in Europe but caused by a different fungus. That the fungus causing the American disease is a botrytis there can be no doubt. That it occurs every year as a parasite on strong, actively-growing peonies we have repeatedly observed. That under especially favorable weather conditions it may become epidemic is a matter of record. We have made many inoculations of isolated healthy plants with pure cultures of this fungus and obtained the characteristic rotting of the buds and stems.

This fungus forms sclerotia, small black, hard masses of interwoven cell threads within the diseased stems. These sclerotia serve to carry the fungus through the winter. In the spring they germinate, sending forth numerous spore stalks which bear heads of conidia or spores. These spores formed on the old stems are in the immediate neighborhood of the young stems as they come up and so are readily borne by wind, splashing raindrops or insects to the young stalks, where in moisture they germinate, sending forth a minute germ tube which penetrates the succulent tissues of the stem. This increases and by the secretion of a violent toxin kills the tissue of the stem, thus making available food for further growth and development. From within the dead, rotted tissues there are now sent forth to the outside, multitudes of tiny branched tree-like stalks on which are borne numerous conidia which are carried to the young buds most probably by ants which frequent these buds for the sweet, sticky secretion which covers them. Climbing up diseased stems the ants become dusted with conidia and leave some behind when walking over the sticky buds. That ants may carry these spores was shown by capturing some on diseased plants and letting them walk over the surface of sterile agar on which we thus obtained pure cultures of the botrytis.

In the secretion on the buds, in rain or dew these spores germinate and infect the bud as they did the stems. In this manner several crops of conidia are produced during the season, spreading the parasite throughout the plantings, and if the weather be moist and cloudy an epidemic of the disease follows.

From what we now know of the life habits of the parasite the following controlling measures are to be suggested:

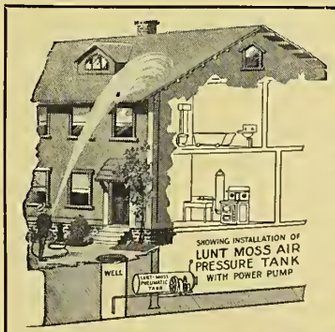
First, the removal and destruction of all diseased parts as fast as they appear, before spores are formed. The destruction of all tops toward the end of the season is especially desirable, as in this way the sclerotia by which the parasite is carried over winter and which are formed in the dead stems, will be destroyed. Cut the



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stems close to the ground or break from the crowns.

Secondly, spray the plants thoroughly as soon as the stems come up and again when buds begin to show; make a third spraying just before the buds begin to open and a fourth after blossoming, to protect the leaves. These sprayings should be made ahead of rain periods and should be thorough. The best fungicide to be used is yet to be determined. One naturally thinks of Bordeaux. This, however, stains the plants and gives them an unsightly appearance.



The Garden for the English Type of House

(*Continued from page* 383)

border of white phlox back of the sweet old day lily that pours out such a stream of fragrance at night especially, will thrive in almost any garden in our climate, whereas many of the plants for which English gardens are most famous, would not do well enough to make them worth the planting.

It is not therefore *what* is planted; it is the manner in which those things that will grow and thrive are planted, that counts in making the garden about a house of the English type. Of flowers we may almost say there can never be too many; every nook and cranny should be filled, just as these pictures show. Vines and roses and fruits should climb the walls; walks should be direct, and the material of which they are laid should be in itself interesting and beautiful—or so handled that beauty becomes an attribute of it, in its relation with the earth and the grass; boundaries must be real and decided—either walls, fences or hedges, neatly kept and business-like; and exquisite neatness must reign, without a hint of that puritanical stiffness which some confuse with neatness. This last is of all the directions perhaps the least easy to follow. Without trying to go into it too explicitly, I think I may say that the stiffness will not appear if just ordinary care is given the garden. It is when the gardener undertakes to make of it a place that shall accord for spotlessness with the indoors that it grows unendurably prim. All that is ugly or unattractive should be kept out of it—such as faded flower heads and dead leaves or branches; but the character of the flowers must not be interfered with. This is one of those subtleties which it seems so hard to put into words. The English garden is never stiff because the gardener knows flowers and loves them—and knows to what extent he is justified in restraining them, or helping them to stand up in their tracks. He stops short of prim repression, just as an inspired

teacher stops short of the same thing in handling a group of high spirited children; but who shall say how this is done?

All gardening is really from within—within the gardener—out. This more than all else, is the key to successfully reproducing any kind of garden, for any type of house. To secure for the English cottage, or more pretentious dwelling, the garden which suits it exactly is therefore more a matter of individual ideals, after the general characteristics of the common and usual English garden are understood, than of anything else. Flowers, flowers, flowers—these are essential to this type of garden; flowers around the dwelling and on the dwelling and wherever there is space for root hold. Adopt this ideal—then learn to know and love the individual flowers, and the plants whereon they grow. Learn to garden with real cultural skill as well as with an esthetic sense; unite the garden with the house by direct walks; do away with steps into the house wherever possible—and the type of garden which suits the English type of house will grow up a part of your home, almost without your knowing that it has done so.

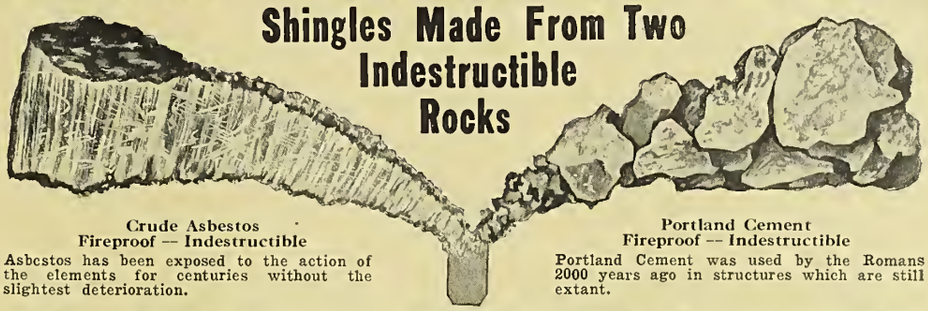
Success with Asters

(*Continued from page* 389)

stone lime each in two quarts of water. Stir well when dissolving and while mixing the two half-gallons of liquids. In slaking lime, add but a little water at a time, as it generates great heat, stirring till all lumps are slaked. Slaked lime should be kept covered with water until it is used. Another remedy is equal parts of freshly-slaked lime and flowers of sulphur, mixed and placed in a coarse bag, and shaken thinly upon the foliage. Ammoniacal copper carbonate is also valuable and it does not discolor the leaves as does Bordeaux. Whatever cure is applied, it is important to remove and burn all affected leaves, or other parts of the plant when possible, before using. Destroy plants in which the disease is much advanced, to prevent its spread.

Give a plant good soil and it will better withstand the attacks of its foes, says an authority on horticulture.

Dig a deep hole for compost, throwing into it from early spring till fall all vegetable kitchen refuse, such as potato parings, rhubarb leaves, pea-pods, corn-husks—even tea and coffee-grounds—faded flowers, dead leaves, etc.; sprinkle each layer liberally with lime; and you will soon have a mass of the rich, humus-bearing material that asters crave. Save all the grass-clippings and add them to this stuff, or pile them up alone—mixed with lime or wood-ashes, or not, as you please, and let them decay till like black earth. This is more valuable for asters than any stable manure, whether added to sand or clay. In



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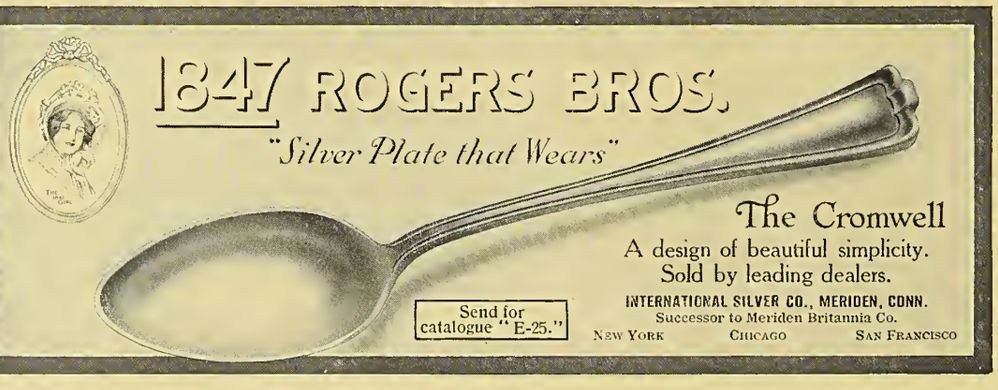
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my opinion, horse-manure should never be used if avoidable where asters are to be grown; and then only when so old that its value lies chiefly in the humus it will furnish. Well-rotted cow-manure will serve; but the fresh article is likely to breed aster disease.

Asters seem to do best in the cooler climate of the New England states and Canada. I find that sunshine all day is unfavorable to their most complete development. In seasons of normal heat, exposed to the sun from morning to night, sooner or later, the stems and leaves of my asters become infested with aphides. green, black or bluish. The remedy for these is a spraying with tobacco tea or an application of tobacco dust. But even in the case of aster ills, I regard prevention as better than cure. So now I plant them where they will have the sunshine only half or two-thirds of the day.

Frequent cultivation is of benefit to asters. Keep the ground about them well-stirred. In weather abnormally warm, the soil may be mulched with grass-clippings or like material. This not only keeps down the weeds, but conserves moisture, and while not ornamental, is of value when they must be planted in a very sunny position, or when the weather is dry.

Asters should not be grown in the same place two years in succession.

They are fond of water, and the soil where they grow should be thoroughly soaked and never allowed to dry out. Tiny seedlings must be watered with some discretion. Too much water in their case causes damping off.

The tall varieties of asters will need staking if the season is one of much wind and rain.

As is true of the rose, the aster has an enemy very difficult to combat, and like that foe, it is a beetle, sometimes black, sometimes striped, but always elusive. Nowhere in nature is delay more dangerous. His ravages are as swift as those of the plague. As soon as he is noticed at his unholy work, provide yourself with a pan of water, into which kerosene has been put, and knock or jar him off into it. Coal oil does not agree with his constitution, and he will never eat again after he comes in contact with it. In the early morning, the beetle is comparatively sluggish and his destruction can be more easily compassed; but it won't be safe to wait for morning if he begins his operations on the flowers in the afternoon.

August is the only month when I have had trouble with the aster-beetle. Nowadays I avoid its depredations either by early or by late sowing. Asters may be sown in a hot-bed during the first ten days of April, and they will then bloom in July, if the weather conditions are ordinarily favorable. I have started asters in boxes in the house soon after the first of April with good results. But the aster is a lover of fresh air. In the dry, overheated atmosphere of living-rooms, the plants are liable to damp off. When they

have shown symptoms of this trouble, I have sprinkled wood-ashes over the soil around them, but sparingly, for they were mere infants, and have checked the mortality, even when I could not save all. Flowers of sulphur is another specific for the minute fungus which causes damping off. It should be dug in around the little plants, using only a small quantity at a time.

Personally I prefer the late sowing.

In open ground, asters may be sown as late as the last week of May or the first of June. The seed germinates easily, usually in from five to seven days, but often in less time. Unless the weather is very warm and dry, asters may be sown up to the first of June; and they will then bloom in September, after the aster-beetle has paid its annual visit. This, at least, is my experience. I am, of course, speaking of varieties whose season of bloom is August. Some Peony Perfection asters sown one year on June the first were in blossom as late as the first week of October, and flowered without molestation.

The late branching sort are, in my opinion, a most desirable kind, not only on account of beauty of form and coloring, but because they bloom in September, when the aster beetle has ceased from troubling, and when most of the flowers have lived out their little day of life.

I have recently seen recommended a solution of arsenate of lead-paste in water —one tablespoonful, slightly rounded, to one gallon of water—to be used as a spray for the combating of this, the aster's most troublesome pest. Lead arsenate may now be bought in comparatively small quantities at a first-class seedsman's. How it affects the digestive apparatus of the aster-beetle, I am not qualified to state; but I can testify that it is deadly to caterpillars.

Although there is almost an infinite variety of form, the classification made by Professor Bailey may simplify the matter of judging varieties, even though to-day some of these divisions are combined:

I—A flower with flat strap-shaped rays loosely bound—
 a. Rays incurved or ball shaped,
 b. Spreading or reflex.

II—Tubular or quilled asters, in which all but the outer ray of florets have tubular corollas—
 a. The inner florets short, the outer flat and longer,
 b. All the florets elongated or quilled.

The Comet type, a variety embraced in Section I, is very popular, and is obtained in great size and various forms. Its rays are flat and curled at the end, and some are twisted beautifully, like the chrysanthemum. The branching type, when used in catalogs, refers to the form of the *plant*, which grows almost like a wide-spreading bush two to two and a half feet tall. Most of the branching type of asters are late flowering. Both this sort and the Comet are now to be had in a dwarf form

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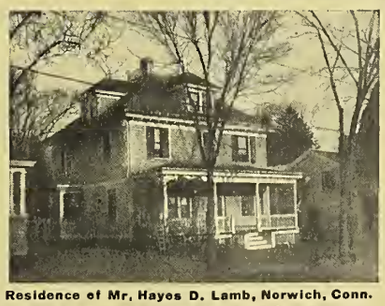
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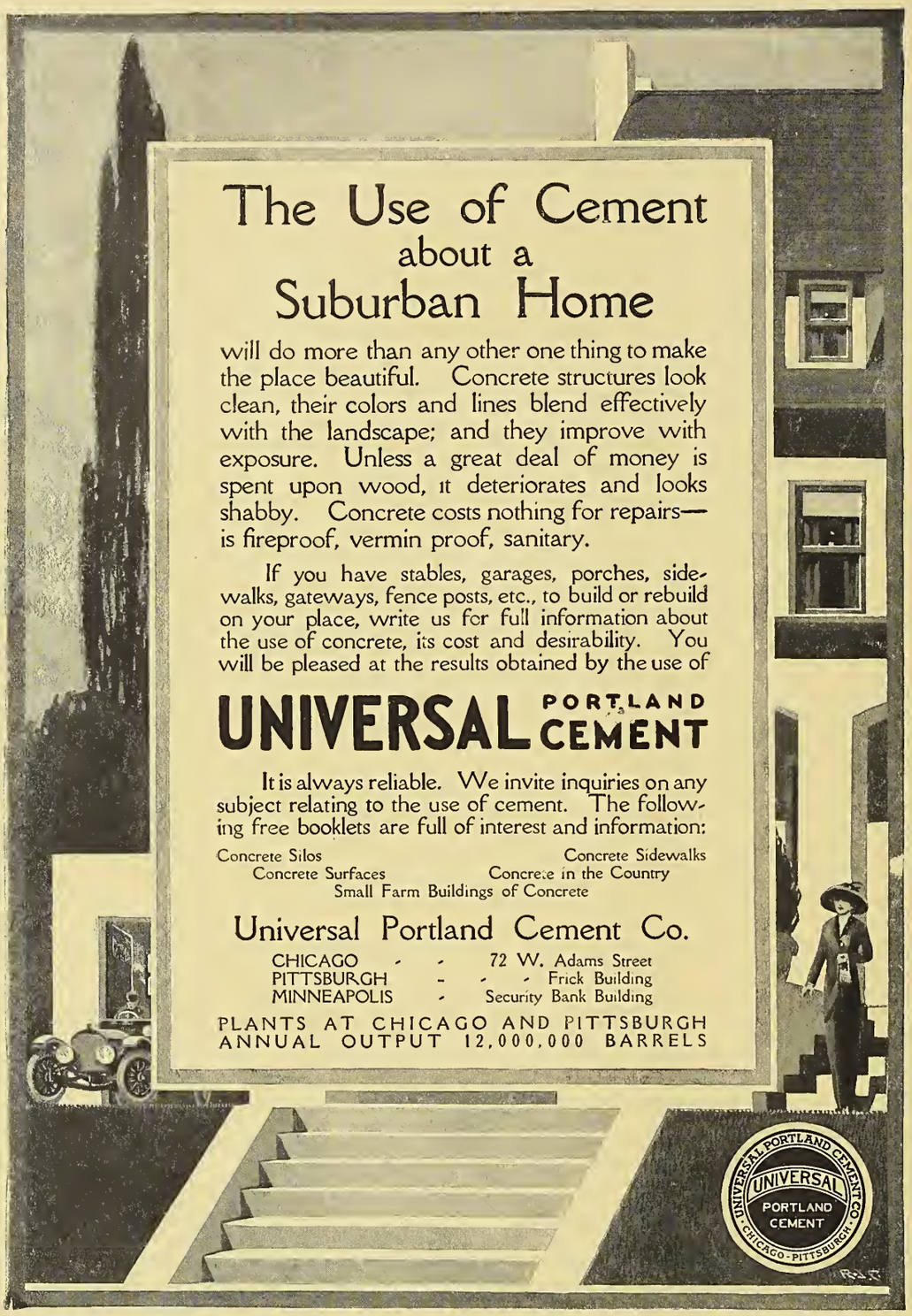
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which is desirable for borders, the others being well suited for massing also. Since various growers have been at work perfecting the varieties, it may be well to mention some of the more common sorts of special merit:

Crego's Giant, a branching sort, is a great, large-flowered, fluffy blossom with the center petals reflexed and curling. It may be had in all colors, and blooms from the middle of August to the end of September.

Victoria, one of the earlier flowering kinds, has reflex petals and bears from ten to twenty well-shaped flowers on a pyramidal bush.

Truffaut's Peony Flowered Perfection has very large double flowers with incurved petals, and in its richer colors resembles a peony. It grows to be two feet tall.

The simple branching type bears double flowers on long stems in the early fall and grows to from two to three feet high.

The sort known as Crimson Rose or Violet King is a popular form of the Comet type, bearing flowers almost four inches in diameter on eighteen-inch stems, a full center blossom with the center petals twisted.

The Daybreak asters are ball-like in shape, stiffly erect on long stems with incurved petals. Flowers are about two and a half inches in diameter, excellent for cutting and come to bloom in August. There are colored forms of this flower. A late improvement is known as the Ostrich Plume or Ostrich Feather variety, and has light feathery petals, long and twisted, gracefully formed and loose.

The Best Use of Annuals

(*Continued from page* 385)

necessitate or warrant. Whether the hardy scheme be formal or informal, a vast amount of experience in the effect of massing blossoms and foliage, the combination of colors and the meaning of skylines and vistas is to be had in this way.

You want to know, perhaps, how small tapering evergreens would define certain garden formality, or would look in an irregular grouping. Experiment with the annual that is well named summer cypress (*Kochia trichophylla*). The color is light green, changing to a reddish tint in autumn, but with the needed form there the imagination can do the rest. Or if you want to get the effect of low shrubs, use the bushy four o'clock, which is a better annual (really a non-hardy perennial) than it appears to be when used separately in any of the self-colored varieties. Put to a practical test, the color value of sheets of low bloom by planting the blood-red Drummond's phlox or the orange eschscholzia, the value of irregular spikes with larkspur, of rayed blossoms with *Brachycome iberidifolia*, of blossoms thrown up on long stems with sweet sul-

tan, of scattered bloom with cosmos, of clouds of tiny blossoms with schizanthus and of pastel shades with scabiosa. Work out formal effects with such annuals as the China aster, candytuft, stock, godetia, alonsoa, tall and dwarf zinnia, chrysanthemum, lupine and French and African marigold—any that are not of sprawling growth. With a little study it will not be difficult to find comparative material.

A garden all of annuals is also a desirable expedient when a place is rented for a season. Perennials, of course, can be set out temporarily and removed with the rest of the household belongings—this is done every year—but the plan is not always practical. Most would prefer to plant annuals and leave the problem of garden permanence to the next comer. Again, this kind of a garden is a welcome alternative when a new place is in its first season and there is either not the time for permanent planting or else a definite scheme is left to future decision.

Then there is the country home that is occupied only from late June to early September. The garden could still be hardy, out of the abundance of summer-blooming perennials, if there is anyone to give it the necessary spring and autumn care; but annuals, and bedding plants treated as such, are sometimes to be preferred for one reason or another.

Whether it is well to possess a garden of annuals simply to have it all annuals is something that no one can decide for another. Without question, it may be a garden of superlative beauty; on the Riviera are great borders that prove this —borders composed of drifts and other irregular sections of some of the most strikingly effective annuals, the arrangement being as careful as if permanent material were employed. Like proof was offered at the international flower show of 1911 in London, where there were groupings of annuals that could not be surpassed with perennials.

The disadvantage of a garden of annuals is not any limitation of esthetic potentiality; it is its impermanence, necessitating complete making over and repetition of expense every year, and a minimum season. The last is the great, and unconquerable, disadvantage; July is at hand before much bloom can be counted on, and of the few species available after the middle of September not all can stand frost without protection. There are two kinds of annuals, hardy and half hardy. The latter are too tender to put plants in the ground until near the end of May, so that getting them started under glass does not help the matter of May bloom. Hardy annuals are so by comparison with the other class, not in the sense that most of the cultivated perennials are. The few that are really hardy, surviving through late seedlings of the previous, hurry their blooming very little.

In the circumstances, why not let the garden of annuals belie its name, just as the hardy garden does without compunc-



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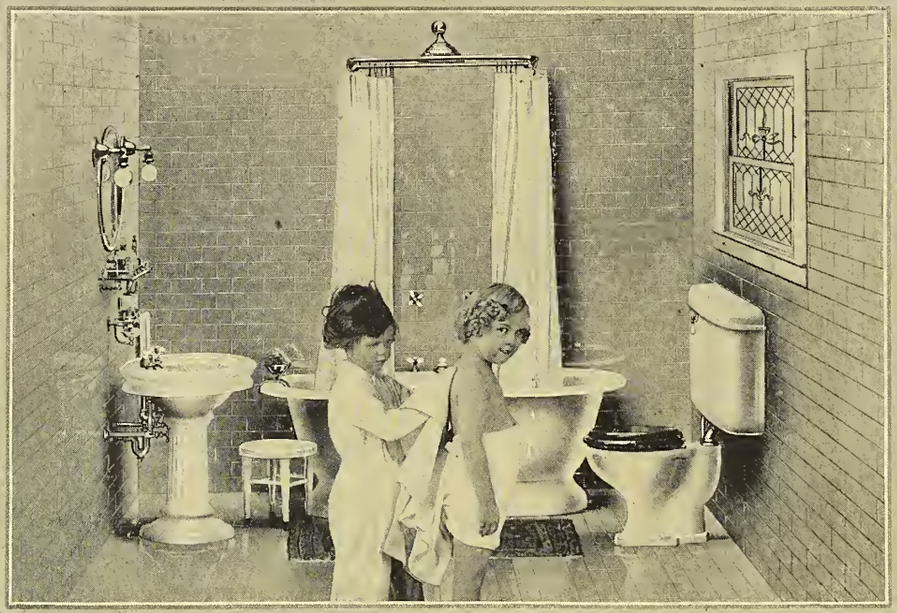
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tion whenever it chooses? Lavish annuals on it in any measure for summer glory, only do not leave the garden bare before and after. This is easily got around by pardonable inconsistency. In October plant the garden with tulips, hyacinths and other spring bulbs. Edge formal beds or borders with hardy candytuft, for a permanent thing; with pansies, *Bellis perennis, Myosotis dissitiflora* or *Arabis albida* for spring bloom or with violas (tufted pansies) for summer flowers. All of these plants can be set out in October, and with the exception of the candytuft any of them are suitable for places between the bulbs, which they follow immediately in bloom when the period is not coincident; the arabis and myosotis are especially good with early tulips, or late ones if care is taken as to the color that goes with the myosotis.

Late in May, when the bulb foliage is turning brown, remove any other plants that are not used for edging and set annuals in all the available spaces. Or the bulbs may be taken up, dried off and reset in the autumn. If this is done throughout, or here and there, the garden may be given a riot of autumn color by massings of hardy chrysanthemums. It is not necessary that the chrysanthemums should be potted ones; they may be plants from cuttings rooted in the spring and grown on in rows, as they will bear moving even when in bloom.

Start the annuals, other than poppies, eschscholzia and sweet alyssum, early by sowing seed in a coldframe soon after the first of May. Keep the plants under glass until the end of the month, or later if the garden is not ready for them. Do not let them get spindling; this is the objection to starting the seeds in the house in boxes in April. If started still earlier in a greenhouse, in March, they can be potted and put in the garden as good-sized plants; but they will reach up for the light and are apt to go outdoors in a weakened condition.

Annuals that are a long time reaching maturity—such as helichrysum, the finest of all the everlastings, and the old type of cosmos—ought never to be sown in the open ground. The fascinating salpiglossis, also, is sown early under glass to insure bloom. Then there is the sweet sultan, which likes to get an early start so that it may give of its best before the heat of midsummer.

An effective way of using annuals is as pot plants—not only to fill spaces in the greenhouse but for the porch in summer and for setting among shrubbery or in garden blanks. A great deal of this is done in England, where some potted annuals are superb specimen plants that cause eyes not familiar with them to open wide with wonder. Think of bushes of *Clarkia elegans,* a yard high and through, that are a mass of double pink or salmon blossoms! These are May possibilities if the seed is sown indoors in September and the plants potted and pinched back to

promote bushiness. Cosmos, for autumn; rhodanthe, one of the everlastings; the common double balsam, nemesia, schizanthus, cockscomb and *Dimorphotheca aurantiaca,* the last of which has handsome hybrids now, are among other suitable annuals for pots. The balsam, nemesia and schizanthus, like clarkia, develop better in pots than in the garden.

One of the biennials, the Canterbury bell, is as fine a subject for pot culture as heart could desire. This and other biennials, among them the foxglove, hollyhock and *Myosotis dissitiflora,* are usually thrown in with the annuals as they are regarded as plants of only a year so far as garden usefulness is concerned. Often they spend scarcely more time in the garden than is necessary for blooming, after which they are discarded. The same with sweet-william and columbine, though both of these will persist longer if conditions are favorable.

Of the number of annuals in cultivation few have any idea. Name a dozen or so and the list that the average person can think of offhand is exhausted. The common annuals are such because of a worth that time has shown, but they do not begin to be all that ought to be common. Nor do they begin to be all the easy ones—if any annuals can be called really difficult.

The salpiglossis is one that deserves to be better known; it is very good for massing if the colors are not mixed, but this plant affords the keenest pleasure when it is in less crowded garden conditions or when the blossoms are in a vase. Unappreciated, too, are schizanthus, with its myriads of little butterflies; nemesia, than which no low annual is more charming and which shows blue as well as red, yellow, pink and white, and phacelia, especially *P. campanularia,* with its blue bellflowers.

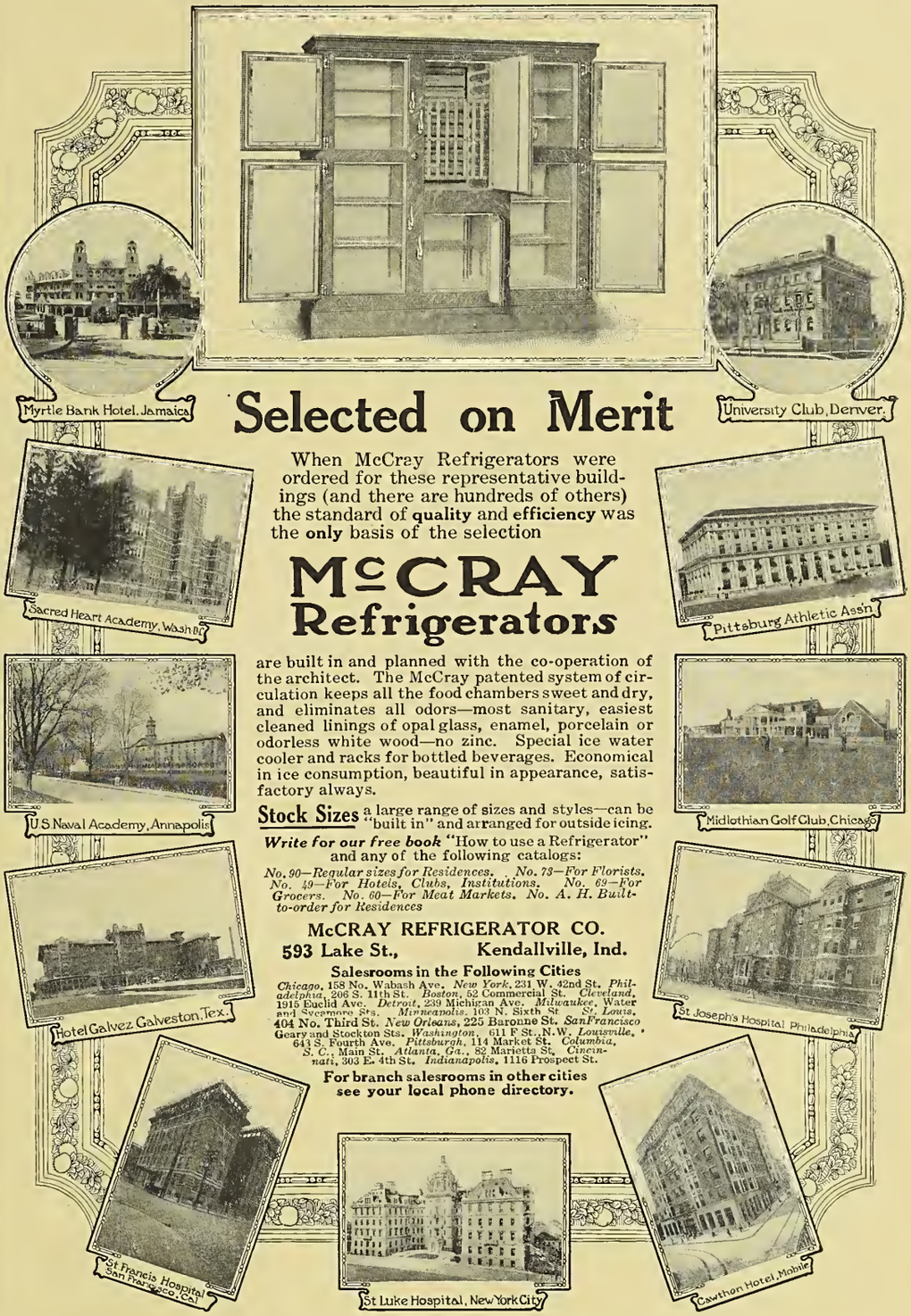
Then there are three rayed annuals that are badly neglected. The swan river daisy (*Brachycome iberidifolia*) from Australia, is among the daintiest of carpeting annuals. The type is light blue, but there are white and pink varieties. Of the others the African daisy (*Arctotis grandis*) is unusual in that the white blossoms have a mauve centre, while the foliage is very downy, and the Namaqualand daisy (*Dimorphotheca aurantiaca*) furnishes rich yellow bloom. This trio is good for all summer.



Simple Instructions for Plotting a Lawn Sun Dial

(*Continued from page* 380)

line on the portion that rests on the ground and shown in Figure 2 starting at the angle at E and running (extended out dotted) to the angle at F, is in all cases 42⅔ inches in length, the measurement of the dotted line running from the angle at F to the angle at G should be changed in length, depending on the location further



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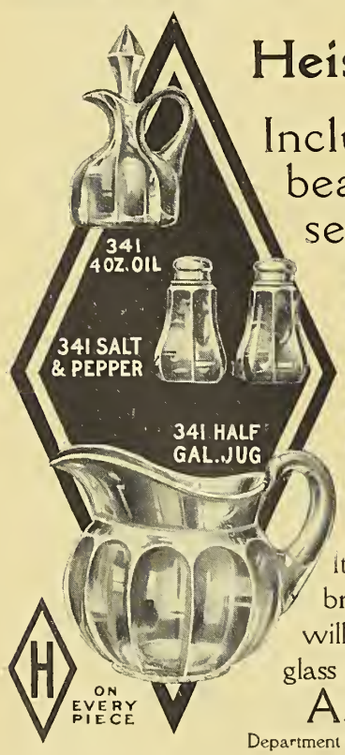
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north from the equator, according to the table of measurements for the gnomon. The city in it nearest to you in a north or south direction, is selected as in the case of the measurements for the hour lines.

The gnomon should be accurately made, and well painted to prevent warping. The lower side along the line E to F (Fig. 2) up to the point where the line becomes dotted in the drawing, rests on the level of the ground. The gnomon is secured in a vertical position by two square 2″ x 2″ pointed pegs, eight inches or more long, shown in Figure 2 by dotted lines. These are driven into the ground, and the gnomon is secured to them by nails or screws.

Having selected and prepared the ground in a sunny location, place the gnomon in the general position that it is to occupy, holding it vertically with the pointed end E (Fig. 2) directed to the south, and the side E F level on the ground. When the watch, accurately set to the standard time of the place, reaches exactly the hour of 12:00, turn the gnomon slightly so that a straight shadow with a width of two inches proceeds from it in the direction of the true north.

Quickly and accurately mark the two sides of this shadow for 12:00, with two cords stretched from small pegs driven in the ground. These pegs correspond to the angles at either side of X (Fig. 1), and at B C (Fig. 1). These two cords mark the boundary of the 12:00 line between which the gnomon rests when the dial is completed, and from which the balance of the measurements are made in laying out the hour lines by the aid of the measurements of the table and Figure 1.

The measurements for the hour lines and the lines themselves should be carefully made; the lines, when the points are established, being marked with the aid of a carpenter's chalk line stretched between pegs driven in the ground. When the dial portion is completed, the gnomon is mounted, as previously described, occupying the space between the two 12:00 lines, and with the end E (Fig. 2) resting exactly on the point where the 6:00, 6:00 lines cross and meet the 12:00 lines at X in Figure 1.

The measurements for the hour lines, and the angles of gnomon for the various cities, representing various distances north from the equator, have been calculated with care, and will be found correct. It will be observed that in the drawing (Fig. 1) the hour lines 3 and 9 fall below the upper right- and left-hand corners. It will be found that with changes in the location where the dial is used, those lines, together with the rest of the hour lines, change their positions somewhat, the 3 and 9 o'clock lines sometimes coming below the upper corners, sometimes in the corners and sometimes above the corners. There is a small variation from month to month in all sundials. They run a little slow at certain seasons, and at others somewhat fast; but the variations during the summer months are only a few minutes.

If you prefer a round dial instead of the

shape shown in Figure 1, a circle may be drawn after the diagram and hour lines have first been reproduced as in Figure 1. This is shown in Figure 3; notice that the hour figures are placed where the hour lines join the circle. The dial as described in Figure 1 is 6 feet 10 inches by 5 feet 4 inches square, without considering the figures on the sides and top. By multiplying *each and every* measurement shown by 2, the dial may be doubled in size; or working in the same way, other sizes may be constructed.

The sun, rising in the east, first begins to register on the 6:00 a. m. line, and thence around through the hours of the day its shadow creeps, until it passes off the dial at 6:00 p. m.

Various decorative schemes will no doubt suggest themselves to the reader, in connection with this subject. Dials of this sort are comparatively rare, owing ordinarily to absence of data regarding the necessary measurements.

New Orleans, La. St. Augustine, Fla.	25 inches
Charleston, S. Car. San Diego, Cal.	28 "
Savannah, Ga. Tombstone, Ariz.	26 "
Memphis, Tenn. Flagstaff, Ariz.	30 "
San Francisco, Cal. Springfield, Mo.	32 "
Washington, D. C. Baltimore, Md. Denver, Colo.	35 "
New York, N. Y. Philadelphia, Pa. Indianapolis, Ind.	37 "
Boston, Mass. Chicago, Ill.	40 "
Buffalo, N. Y. Madison, Wis.	41 "
Bangor, Maine St. Paul, Minn. Salem, Ore.	43 "
Tacoma, Wash. Bismarck, No. Dak. Quebec, Canada	46 "

Heights of the gnomon in Fig. 2, varying with the locality.



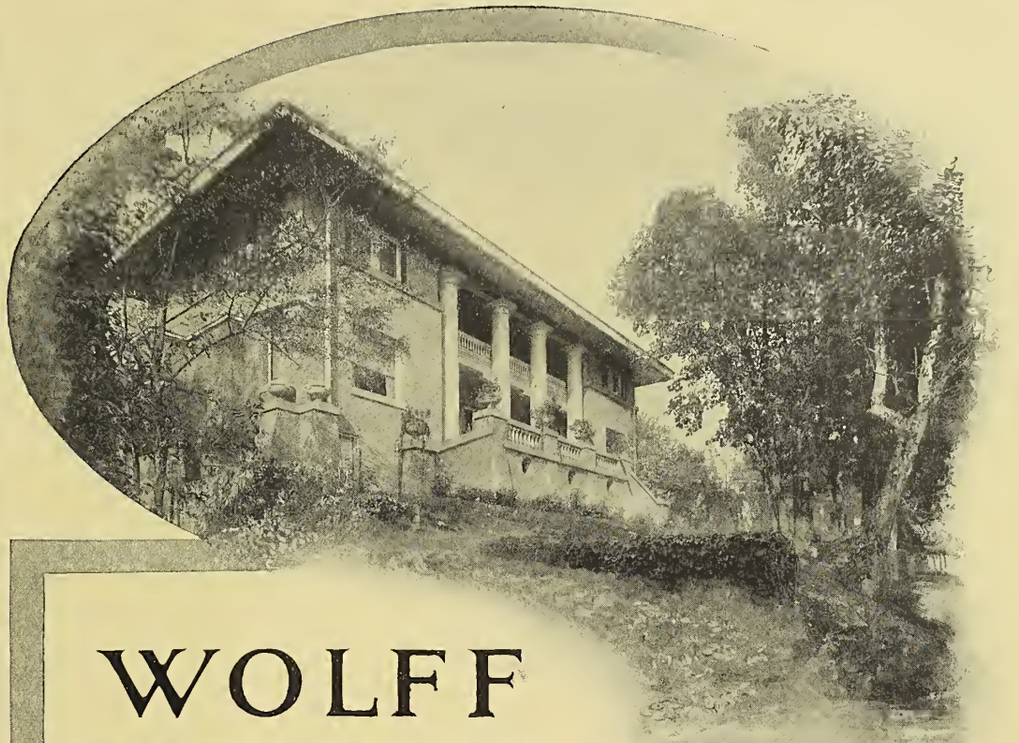
When Fine Feathers Make Fine Birds

(*Continued from page 376*)

They lay well enough to furnish a considerable number of table eggs but need good care.

The White-Faced Black Spanish breed is very old and very odd. Their chief point of interest is a long white face, which makes the birds of both sexes look as though wearing bibs. Fanciers try to keep these faces free from wrinkles. The plumage of this breed is rich and glossy, so that the Black Spanish fowls are decidedly ornamental. They make a striking appearance on the lawn. They pay for their keep, too, for they lay a large number of white eggs.

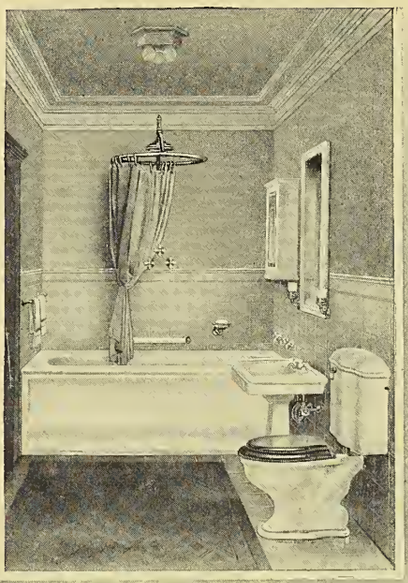
Houdans belong to the French class and they, too, have crests, while every fifth feather is tipped with white, which gives them a curious mottled appearance. Being tame and friendly, these birds are found on many estates and are much ad-



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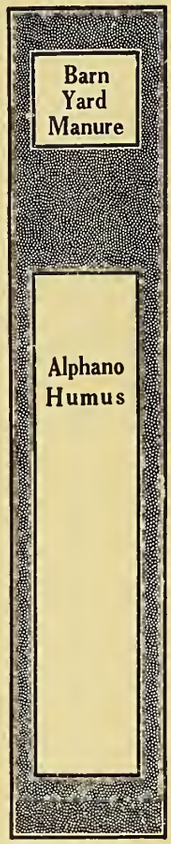
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mired. They lay well and in France are very popular as utility fowls.

Probably the Andalusian came originally from Spain. So the name, at least, would indicate. Its most marked characteristic is its feathered coat of blue, set off by red face and eyes, and white ear lobes. Domestic birds with blue feathers are rare, although blue Leghorns, Orpingtons and Wyandottes are now occasionally being shown. In fact, there seems to be a growth of interest among fanciers in blue fowls. Andalusians are graceful and attractive. Also, they lay a generous number of white eggs and are not hard to raise. They are highly ornamental in flocks of a dozen or more.

When we come to bantams, we find a great number of daintily beautiful little creatures, some of them perfect pocket editions of larger breeds. There are miniature Cochins, Brahmas, Polish and even Plymouth Rocks. These varieties are delightfully attractive, with their pert manners and great show of courage. They may be allowed full liberty and will do little damage even in the vegetable garden. The cost of keeping them is but a trifle, a tiny house will shelter them and they are charming pets for children. They lay eggs, too, which are large enough to be put to use by the cook, and produce a considerable number in spring.

There are other bantams, however, which are even more ornamental, among them the Sebrights in two varieties, golden and silver. Odd as to shape, saucy as to manners, and rarely beautiful in plumage, they are greatly admired. Then there are the Japanese bantams, with their large erect tails, almost touching the backs of their heads. There are white and black and white black-tailed varieties, the latter being especially interesting. Rose Comb Black and Rose Comb White Bantams are likewise ornamental and highly prized by fanciers.

If there be a little water available, it is not necessary to confine the number of one's ornamental birds to land fowl. A pool a dozen feet square will suffice for a small collection of ducks, and such a pool can easily be made of cement. It need not be more than two feet deep. When larger water birds like swans are kept, there should be a pond at least fifty feet wide. Swans are naturally and properly very popular with the owners of large estates, especially if there is a formal lake. The common mute or royal swan is hardy and requires but little protection even in winter. Swans will breed if they can find a secluded spot and are not disturbed. They mate in pairs and are very devoted, but each pair needs to be kept in a separate enclosure if confined to limited quarters, for the males are inclined to quarrel. The mute or royal swan is the most attractive variety. These swans were formerly the pets of royalty in England, to be kept by no one else without a license. Even yet the Royal Swans are to be seen on the Thames, each with a peculiar mark on the

beak. A pair of mutes cost in this country about $40.00.

There are several breeds of geese which are considered ornamental and which are often seen. They include the Chinese, Egyptian, Sebastopol and Canadian wild geese. The Chinese geese are found in two varieties, white and brown. They stand as erect as an army colonel and at the base of the beak is a curious knob, which gives this breed a distinctive appearance. It is not necessary to confine these geese closely and when they have been allowed to breed freely the young birds may be served on the table, for the flesh is delicious. Chinese geese are not expensive, costing fifteen or twenty dollars a pair.

Egyptian geese are smaller but are highly ornamental, with rich coloring. They are easy to raise but have one serious fault—they are very pugnacious. If placed in a yard with other birds they are sure to play the bully, sometimes to the extent of birdslaughter, if the offense may be so styled. For that reason they should be made to flock alone and it is a common practice to clip one wing, to prevent their flying into quarters where they are not wanted.

Sebastopol geese are not so often seen, but are curious and beautiful. They are pure white and their feathers are long and silky, falling even to the ground. A small pond will suffice for a few of these birds, and they will prove a constant delight. They cost about $40.00 a pair.

Less than half the price charged for the breed last named will pay for a pair of Canadian wild geese. Nevertheless, these birds are stylish and handsome. They are easily domesticated but must have a wing clipped if they are to be kept at home. Often they and other water birds are pinioned, which means that one wing is taken off at the outside joint. By this means they are permanently debarred from flying far; if the wing is simply clipped, the feathers will grow again. They will breed in captivity if allowed to choose a quiet spot on the bank. Geese are bold, interesting creatures, but it is well to have them some distance from the house, for their cries are not altogether musical.

Finally there are the ducks, some of which can boast feathers almost as fine as those of the gorgeous pheasant or the vanity-stricken peacock. The wood duck, for example, and the Mandarin are wonderfully beautiful. These are really the bantams of the duck family, but rank first among the ornamental varieties. In fact, they are simply little bunches of brilliant plumage, bedecked as was Joseph in his coat of many colors. The Mandarins, natives of China, as their name indicates, have crests on their heads and fans on their backs which can be raised and lowered at will. They must be given the utmost seclusion at breeding time and never interferred with. If kept in yards, piles of brush may be thrown into corners for hiding places. Mandarins and wood



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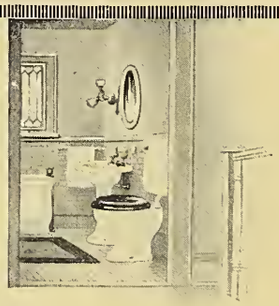
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ducks may be kept in covered yards with a small pool in the middle. A washtub sunk into the ground will answer for a pool, if a drain can be made under it and a plug fitted to a hole in the bottom of the tub. A cement pool looks better, of course, and costs but little.

White Call and Gray Call ducks are also bantams, and while they cannot display the brilliant colors of the Mandarin and the wood duck, are pretty, graceful little birds and well worth keeping. They, too, require only a little water. They are considerably cheaper than their gorgeously arrayed relatives, which cost about $25.00 a pair.

Mallard ducks, while not especially beautiful, are very easy to raise and are found in most collections. They mate in pairs, breed freely and may be allowed their liberty if pinioned. Not only do they do little damage in the garden, but they actually perform a service by killing many insects and bugs. These ducks are often kept on small ponds to destroy the grass which grows in them. Also, it is well worth mentioning that Mallards are delicious when the cook has prepared them in proper shape for ornamenting the dining table.

A variety of duck which is well adapted to small places is the Muscovy, both white and colored. The latter is very handsome, but both kinds are attractive, easy to keep and especially good for table use, as the flesh does not dress away as in the case of many varieties. Another point which commends them is the fact that they make no noise save a sort of hiss. For that reason they may be kept where other ducks would soon make themselves a nuisance. A good way to begin raising these ducks is to buy a setting of eggs for two or three dollars.

One other duck worthy of a place in the ornamental category is the Rouen, the lineage of which might probably be traced back to the Mallard without serious difficulty. The drake resembles the Mallard, but the duck is much handsomer. These ducks lay well and are excellent for the table.

The list of ornamental birds might easily be extended to take in others which are more rare and yet easily obtainable. There are other varieties of ducks and of swans. There are cranes and storks and pelicans and flamingoes. These sorts, though, are best left until a good start has been made with birds more commonly seen. The raising of ornamental fowls is a hobby almost without limitation so far as stock is concerned, and fascinating even when confined to a few pheasants or a flock of fancy poultry.

Then, too, it is a new hobby and one that is fraught with great possibilities from many viewpoints, for the fowl of brilliant plumage need not be difficult to care for and may aid in the decorative scheme of your grounds and garden fully as much as any other single factor.

Complete Directions for Spraying

(*Continued from page* 391)

contact, and in a few hours after you apply it will have evaporated and left no trace of itself except in the presence of dead insects. Kerosene emulsion may also be used, but is less convenient and agreeable. Plain hot water, or soap-suds, not boiling, but so hot that you cannot hold your hand in it, may be used as a dip. In this case the plants should be held in such a manner that there is no possibility of its slipping inadvertently from the pot; immerse completely but quickly and immediately withdraw. This will usually cook the bugs without injuring the plant, but when you attempt it for the first time, try it on two or three first, to be sure that you have got conditions just right.

Here is a more detailed description of the insects and diseases you are likely to encounter in the house or in the flower garden.

Aphids—The aphis, or green plant louse, is the most common and troublesome. It is soft-bodied, active, and under proper conditions has the ability to increase with a rapidity which is absolutely inconceivable. These conditions are, crowded plants, shade, poor ventilation and dryness. Where such conditions exist they should be changed at once, as otherwise you will simply be breeding aphids for the fun of coating them with spray.

Mealy-bug—The mealy-bug has a special liking for coleus, salvias, fuchias and other soft-wooded plants. It is easily recognizable, but not at all dangerous-looking, being hidden beneath what appears to be a very small tuft of cotton. If you notice it when the first few appear, it may be got rid of by touching each individual with a drop of kerosene or alcohol at the end of a match-stick.

Scales—The brown scale is protected by a "shell" one-fourth inch or so in diameter, slightly convex, and does not easily succumb; nor is it readily recognizable, as it is usually about the color of the stem to which it attaches itself, and does not move about. The white "scale" is very much smaller, but multiplies much more rapidly, quickly forming dense colonies. Both are very quiet and industrious, apparently doing no harm, but in reality sucking out the life juices of the plant to an injurious extent. Spraying, to be effective, must be done with a solution stronger than that used for aphids or mealy-bug. Dipping, where it is possible, is surer. Where only a few are to be got rid of they may be painted with kerosene emulsion or whale-oil soap.

Beetles—The rose-beetle and aster-beetle are two of the hardest garden pests to control that there are. Some seasons they give very little trouble indeed, and in others destroy practically all the flowers, or even the entire foliage of these two plants. It is best to sacrifice some blossoms, and the looks of the plants temporarily, and spray with a very strong solution of arsenate of lead. Where they are



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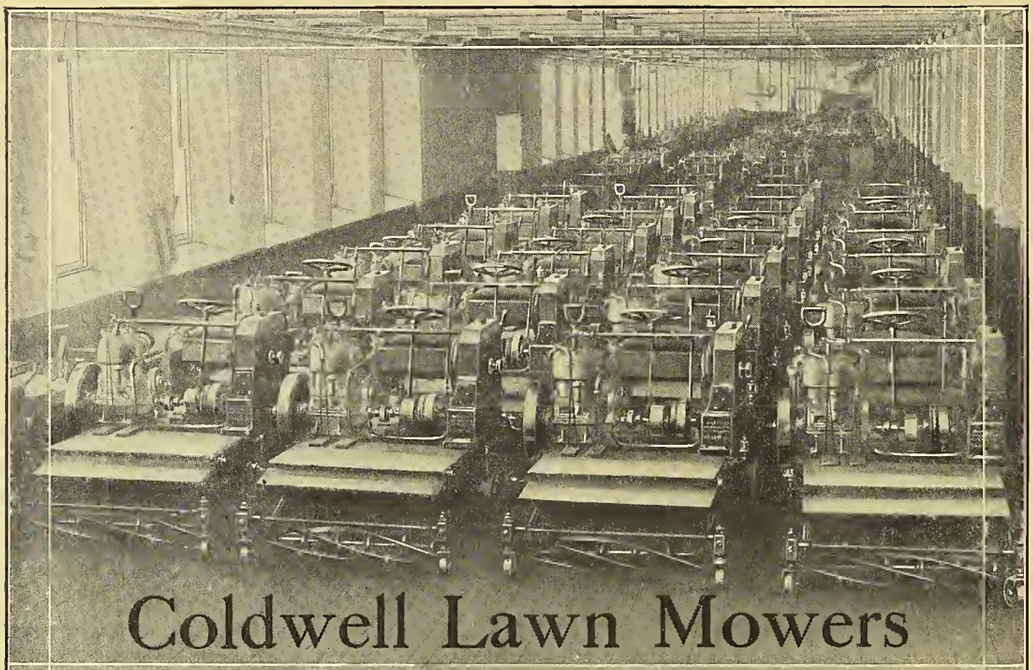
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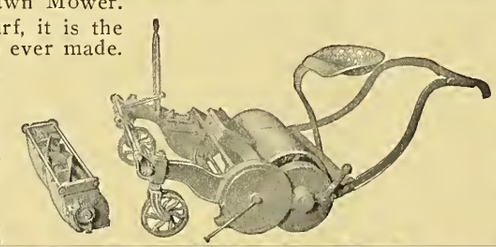
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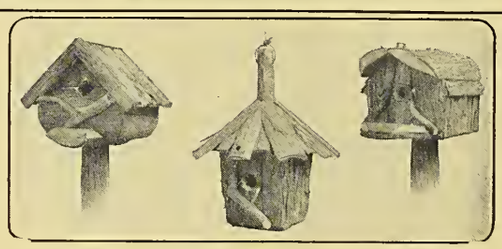
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not encountered in too great numbers they can be quite rapidly dispatched by knocking them with a small paddle made from a shingle into a can of kerosene and water.

Fungus—This appears in several forms, all of which are controlled by thorough spraying with Bordeaux mixture. Where discoloration of the foliage is objectionable, one of the specially-prepared fungicide spray materials upon the market may be used. It should be kept in mind, however, that to be really effective any treatment of this sort must be used as a preventive rather than as a remedy.

Mildew is the result of some sudden check or shock given to the plant, such as a draft of cold air from a window, or, outdoors, a sudden change in the weather. Some plants, such as roses, are very readily affected, and upon others it never appears. It is easily recognized as it causes the tender new leaves to curl up and be discolored, and covered with what seem to be a white powder. Spray the plants until wet with plain water or Bordeaux, and dust thoroughly with flowers of sulphur.

One of the chief reasons why insects are more apt to do damage in the garden than in the house or in the flower garden is because the plants growing there are as a rule not so carefully watched, and when the intruders come they are allowed to get too much of a start before anything is done to combat them. I cannot emphasize too strongly that the first and most important step toward having a garden free from troubles of this sort is to keep a constant and sharp watch for the very first signs of any danger. And when it appears, no matter what else is demanding your attention, attend to it at once.

Aphids—Conditions out-of-doors are not usually favorable for the plant lice, of which there are several sorts and colors, to develop to any great extent. During dry weather or where plants are growing crowded together, a sharp watch should nevertheless be kept, and kerosene emulsion or tobacco dust or both used at the first sight of one.

Asparagus Beetle—Clean cultivation and cutting the stalks below ground will usually prevent these fellows from doing much damage. If they do put in an appearance, however, use strong arsenate of lead very thoroughly.

Caterpillars—The most common and troublesome of these is the medium-sized, green caterpillar which attacks cabbage and other plants of the cabbage group. If possible, capture and kill all the small white and yellow butterflies which may always be seen hovering over these plants early in the spring. If worms do appear, spray them with Paris green or arsenate of lead before the heads begin to form and put a quick stop to them. In later stages of growth hellebore may be used. There is little danger in using these poisons on cabbages because the heads form from the inside and the outer leaves are always discarded in cooking. The light green caterpillars which eat the leaves of carrots,

parsnips, celery, etc., seldom appear in any great numbers and are easily demolished by hand picking. The very large "horn worms" which attack tomatoes and tobacco may be controlled either by hand picking or thorough work with arsenate of lead.

Cucumber Beetles—These lively little black and yellow striped fellows attack cucumbers, muskmelons and other vined plants especially in their early stages of growth, and not only do great damages by their ravages of the foliage but are believed to communicate the disease known as cucumber wilt. Spray with arsenate of lead and keep the vines covered with fine ashes or a generous sprinkling of tobacco dust.

Cutworms—These are probably the most annoying of all garden pests and cannot be controlled by any spray used in the usual manner. The best of methods of prevention is to distribute at points a few feet apart, and a few days before the plants are set out, small pieces of poisoned bran mash; the latter is made by mixing bran with water and a little molasses until the mash is made and working Paris green or arsenate of lead through this thoroughly. The worms are very fond of this sweet bait, and die happy and contented. Where you do find a plant cut off, early in the morning you can almost invariably locate the culprit near the root in the soil by turning it over with the fingers.

Flea Beetle—This is a very minute and hard-shelled little jumping-jack which attacks the foliage of potatoes, tomatoes, young cabbage and turnip plants. Thorough work with kerosene emulsion or strong Bordeaux mixture or arsenate of lead will usually prevent their doing any damage.

Potato Beetle—This intruder which needs no introduction to the gardening public invariably finds the potato patch no matter how small it is and any eggplant which you may set out. Arsenate is the most effective remedy, although Paris green is largely used also. Destroy all clusters of eggs which may be found upon the under sides of the leaves.

Squash Bug—This is the large, flat beetle so very offensive in odor. I have never found anything which was effective in killing the full-grown ones. The young, however, do the real damage, and as these are soft-skinned they may be subdued with strong kerosene emulsion or a heavy dusting of tobacco.

Blight—Among the diseases which one may expect to encounter in the vegetable garden, by far the most serious are the various forms of blight which attack potatoes, causing early yellowing and withering of the vines and in the late crop and the rotting of the tubers; "leaf spots" on tomato plants and blight or withering of the leaves in muskmelon vines and cucumbers.

Mildew—Second in seriousness are the various forms of mildew which attack



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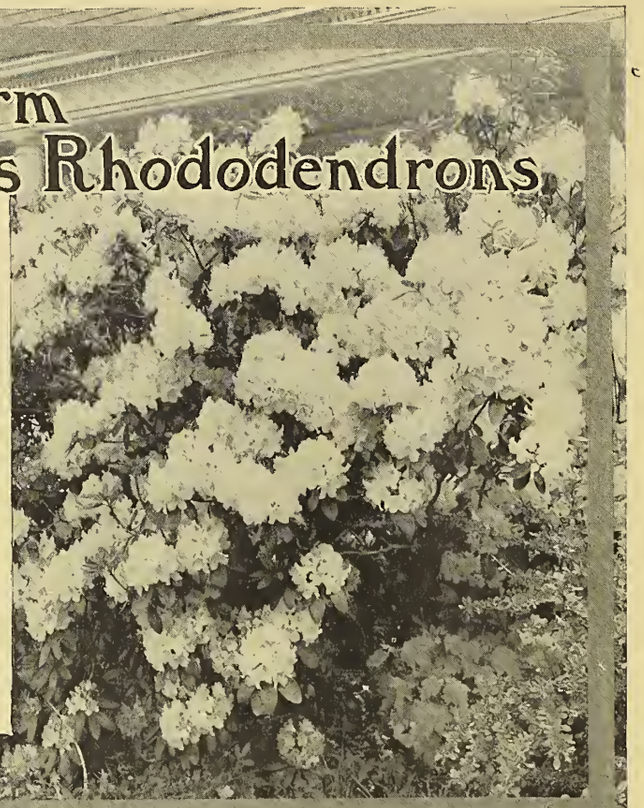
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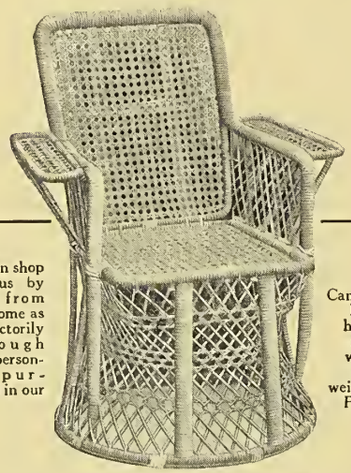
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muskmelons, lima beans, etc. These are all controlled with thorough spraying with Bordeaux mixture, applied frequently enough to keep the foliage covered from the middle of July on. Three to five sprayings will usually be required for effective protection.

FORMULAS

Direct Poison for Chewing Insects

Arsenate of Lead, or *Disparene*—

3 ounces crystalized arsenate of soda,
7 ounces crystallized acetate of lead,
10 gallons water.

Dissolve the crystals separately in a small amount of the water—the lead dissolves more readily in warm water—mix them when dissolved, and add the remainder of the water. The mixture will be milky, but need not be strained if the crystals have been thoroughly dissolved. *Disparene* may be purchased under this name either in dust or paste form, but it is better to get the two ingredients and mix as needed, for it is simple stuff to handle. Whatever the amount used, always keep the proportion of one ounce of the crystals to one gallon of water. For example, if six ounces of the arsenate of soda were used, fourteen ounces of the acetate of lead would be required, which would make twenty ounces for the total, needing twenty gallons of water. This is the safest of all the direct poisons, is effective and satisfactory, and should be used instead of Paris green or any of the other more commonly known remedies.

Hellebore (non-poisonous to man)—

1 Ounce of the powder to 1 gallon of water, if used as a spray.
1 Part powder to 5 or 10 parts flour, if used as a powder, mixed and allowed to stand for twenty-four hours in a tightly-covered vessel.

Sprinkle this on leaves, underneath and above, while plants are wet, either with dew, rain or by a watering-pot. Usually used on currants and succulent vegetation which is soon to be eaten, to destroy worms.

Contact Poison for Sucking Insects

Kerosene Emulsion—

½ pound hard soap (or 1 quart of soft soap),
2 gallons kerosene,
1 gallon rain water or water "broken" with lye if hard.

Dissolve the soap in the water by boiling. Add to the kerosene while boiling hot, churning the mixture violently by pumping it back upon itself through an open nozzle which throws a strong stream. An emulsion will result in about five minutes, or less, when it will have increased in bulk one-third to one-half, and will be as thick as rich cream. This keeps indefinitely as stock.

Dilute one part of this stock with ten parts of water for apple and pear. Dilute one part of stock with fifteen parts of water for plum, peach, etc., and all other

fruits, trees, etc. Never use stronger than this on growing vegetation; it is a spray that requires extreme care, and directions must be literally followed.

Soap Wash—

2 pounds whale-oil soap,
1 gallon water.

Dissolve the soap in the water by heating; it may be used full strength before growth starts. Dilute with five gallons of water, or in this proportion, and apply hot, after the growth has started. This strength is especially directed against the soft-bodied aphides, or plant lice. Common laundry soap of any kind will make an effective wash to use against these, using one-quarter of a cake to four gallons of hot water.

Fungicide for Mildew, Rust and All Fungous Affections

Bordeaux Mixture—

Make a stock by dissolving one pound Copper Sulphate—blue vitriol—in one gallon of hot water. Keep in a wooden or porcelain vessel, tightly covered. This must be combined as needed with Milk of Lime, made as follows: Slake the quantity of lime required slowly, and after it is slaked add enough water to make a thick paste. The proportions for combining these two ingredients are as follows: One gallon copper sulphate stock to one and one-half pounds lime (dry weight before slaking), reduced with thirteen gallons of water; or, for more delicate plants, one gallon of copper sulphate stock to two pounds lime, dry weight, reduced with seventeen gallons of water. Bordeaux mixture loses strength by standing after being compounded. Do not mix the Copper Sulphate and the Milk of Lime, therefore, except as you require the solution for immediate use. The mixture is offered for sale, but because of the element of uncertainty regarding the length of time it has been compounded, it is usually better to mix it oneself. For use in small quantities, however, the most convenient way of getting this mixture is in the ready-prepared compounds which may be had either in paste or dry powder. To make your own, a convenient proportion is four pounds of copper sulphate, four pounds of fresh lime and eight gallons of water. To make stock solutions dissolve the copper sulphate in half the water, either having the latter very hot, or suspending the former near the surface of the water in coarse sacking. Slack the lime in the rest of the water, adding the latter a little at a time. If this lime solution ever seems in danger of drying out from being kept too long, add more water. For spraying, pour the copper solution into the tank in the proportion of one gallon for every ten gallons of spray required. Add the water, and then pour in one part lime solution, first diluting it and straining it. In spraying, every particle of foliage, stem and bark should be covered, for the pests will be quick to take advantage of any omission.



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Inject a few drops of the liquid into holes in stems caused by borers, and plug with putty, wax or mud. A medicine-dropper may be used to drop the fluid into the hole.

Make holes in the soil, where root insects are at work, as deep as the deepest traces of the insects, four holes to the square yard in heavy soil, three to the yard in light; drop two tablespoonfuls of the liquid into each hole, and close up at once by tramping the earth down hard.

Never bring carbon bisulphide too near a light or fire.

Poison Bait—For cutworms, wireworms, grasshoppers, locusts and all insects which travel along the ground and eat. (Never use where there are chickens running in the garden, or where pets are allowed free range.)

Dip small bunches of clover or any juicy green vegetation, into the arsenate of lead solution and spread about with a board or stone placed over each clump to prevent its blowing away. Renew every three days. Slices of apple or potato may be used instead of the green-growing stuff, if more convenient.

A mash to put between the rows of vegetables where cutworms and wireworms are troubling may be made of eight pounds of bran, one pound of white arsenic and two pounds of brown sugar. Moisten with enough water to make it wet but not sloppy. Put a teaspoonful at the base of each plant—but do not let it come near the stem, for it will burn it if it touches it.

Tobacco is used either in the form of an extract, to be diluted with water, or a fine powder which may be dusted on moist foliage. Both forms are quite effective, and especially so as preventives.

Lime Sulphur Wash—Always has been and still is used largely as a winter spray for dormant trees, for San Jose scale, pear psylla, etc. Mix one gallon of commercial lime sulphur with nine of water. Of late years, however, there have come into use quite extensively, to be used in the place of lime sulphur wash, miscible oils, which are very convenient to handle, and mix very readily with cold water. They are more expensive than lime-sulphur, but for using in the home orchard on a small scale, preferable to the latter.

Of the fungicides the most extensively used is *Ammoniacal Solution of Copper Carbonate.* This is used for spraying where discoloration of foliage or flowers left by Bordeaux mixture is objectionable. Otherwise it is inferior to the latter. To prepare this spray, dilute three pints of strong ammonia in two or three quarts of water, and in this dissolve the copper carbonate, six ounces. To use, dilute at the rate of fifty gallons of water to the above mixture.

Lime-sulphur is also used as a fungicide, but should be made very much

weaker than when used for a winter spray, one and one-third gallons commercial lime-sulphur to fifty of water being sufficient where it is to be used on foliage.

Spraying Calendar

Work for April

Mix arsenate of lead and first strength Bordeaux mixture together and use as one spray, as soon as the leaves are unfolded, on apple and pear. Spray again with the same mixture, same strength, three days after the flower petals fall. This may be around the first of May.

Mix arsenate of lead and second strength Bordeaux mixture together and use as one spray, as soon as the leaves are unfolded, on cherry, plum, peach and apricot. Spray again with arsenate of lead when petals have fallen and every ten days thereafter until three more applications have been made, or five in all. Cultivate the ground to a depth of two inches under trees for five weeks after the full bloom. Curculio larvæ are changing to beetles under ground during this time, and are thus destroyed by the destruction of their earth cells. Bordeaux mixture, second strength, may be used with every other application of the arsenate. This is used always as a preventive against fungous diseases, and it is too late to use it when such disease has made its appearance. Hence the advisability of adding it to nearly all other sprays, and using it constantly.

Use second strength Bordeaux mixture on all small fruits, ornamental trees and shrubbery generally, as soon as leaves unfold.

Spray roses with the full strength soap wash, applied hot, before growth starts, for scale insects. Use second strength of Bordeaux on them by the middle of the month, or as soon as their leaves are unfolded.

Work for May

Use same mixture of arsenate of lead and Bordeaux on apple and pear as soon as the first "worm-hole" is discovered on one of the tiny sets of fruit. The exact time of this application may be determined by careful watching alone, for it should be used when the larvæ of codling moth and Curculio are entering the fruit. Look over the trees daily and as soon as the sign appears, get busy.

Use arsenate of lead and second strength Bordeaux on peach and apricot, as directed under "April."

Use arsenate of lead on cherry and plum, as directed under "April."

Use second strength Bordeaux and arsenate of lead on all small fruits, ornamental trees and shrubbery generally.

Spray roses with the diluted soap wash for aphids and with second strength Bordeaux or with potassium sulphide, for fungi. The latter is preferred for roses. It is made from a stock composed of three pounds of potash, three and one-half pounds of sulphur, ground very fine, three ounces of salt and one gallon of water. Mix the first three together in a metal or

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earthen vessel and add part of the water. This will make a mixture that boils. Add the remainder of the water gradually. To use, dilute one part of this with one hundred parts of water. Where there are many roses to be cared for, such a stock is almost imperative, for roses require spraying at least once a week to keep them in prime condition.

Work for June

Use the arsenate and first strength Bordeaux on apple and pear thirty days from time of last using. Spray with the arsenate promptly if any small caterpillars are seen anywhere on the trees, repeating as may be necessary throughout the season.

Continue use of arsenate of lead on cherry, plum, peach and apricot as directed under treatment for April, unless the requisite number of applications have been made before the beginning of this month.

Spray roses with the *Potassium sulphide* every week, and with arsenate of lead for slug-worms and rose-bugs as soon as either appear.

Work for July

Spray apple and pear with arsenate of lead about the twenty-fifth of the month, to catch the second brood of the codling moth.

Spray roses with the same, for rose bugs; with the diluted soap wash for aphids; and with the potassium sulphide to prevent fungous disease. Only the latter need be used regularly each week; use the other two only if necessary.

Work for August

Spray apple and pear with arsenate of lead the fifteenth of the month.

Spray roses weekly with *Potassium sulphide,* throughout the season.

The Hundred Per Cent Garden

(*Continued from page* 393)

ready-mixed brands for use in a hill or drill is somewhat risky as they frequently contain substances which will injure the tender rootlets of plant and seedlings. We use a mixture which we mix ourselves and which consists of one part each of tankage, cotton-seed and bone flour, which we have found to be very quick-acting, very effective and perfectly safe. If you will take your hoe and open up the hills where you are going to plant for four or five inches down, or run a deep furrow with your wheel-hoe the length of the row you are going to plant, and then use this mixture, about a third of a small handful to a hill, cover it over with soil and set out the plants or sow the seed, you may be assured that you are taking proper measures toward insuring one hundred per cent. results with these particular crops.

The tall-growing peas, pole-beans (both Lima and the ordinary kind) and tomatoes ought all be given adequate support if you expect them to supply you with the best they can produce. I am of the opinion that the tall-growing garden peas will be used less and less as the improved Amer-



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ican substitute dwarf sorts such as Maxtonan, Blue Bantam and British Wonder become more known. Getting and putting in a supply of brush for peas, especially if any quantity at all are planted, is exceedingly troublesome. Getting supports for a few dozen tomato plants or hills of beans is not such a difficult problem. But improved garden methods have not spared even the old-fashioned bean-pole and its shorter brother the tomato-pole. The objection to these is that they keep the vines huddled together so that sun and air do not have the free access they should to all parts of the plants, thus delaying the ripening of the fruit and inviting various diseases. There are a number of patented tomato supports which overcome these objections, but if one does not care to invest in these, it is an easy matter to make some stout garden stakes pointed at one end and nail lathes or some similar narrow light pieces of wood across these at right angles. Bean-poles may be made in a similar way, but these should of course be made taller and the cross-arms need not be so long. These "arms" should be placed twelve to eighteen inches apart. A length allowing four to five feet above ground for the tomato-poles and six to eight for the bean-poles will be about right, and they should be sunk at least eighteen inches into the ground. These will of course cost a little more to provide than the old-fashioned poles, but if properly cared for they will last for years, while the latter are good for only two or three seasons at the most and then go to the woodpile.

It is always better to set these poles before planting, as the job can then be done better and much quicker. A wooden mallet and a crowbar are the only tools you need to put them in with, as they will be much firmer when driven into place, than if placed in a hole and the earth packed around them.

If conditions at the time of planting are not just right, the seeds of the tender vegetables will rot in the soil much more readily than will those of the hardy crops. This is especially true of corn, beans (particularly lima beans), and muskmelons. Therefore the experienced gardener learns to watch the conditions of soil and the weather outlook, as well as the advancement of the season. The ideal time for planting is as soon after a good soaking rain as the soil begins to get crumbly and workable again. If you plant just *before* a rain the soil may stay wet and cold long enough to cause the seed to rot, or the surface may become packed so hard that the seedlings, and especially those of fine seed, can push up through it only with difficulty.

Where such small amounts of seed as are required for the home garden are used, often the most satisfactory way of making sure of good germination is to soak the seed for a day or more in slightly warmed water until it is swelled and ready to sprout. It may then be rolled in fine dry earth to dry it off, and then sowed in the usual

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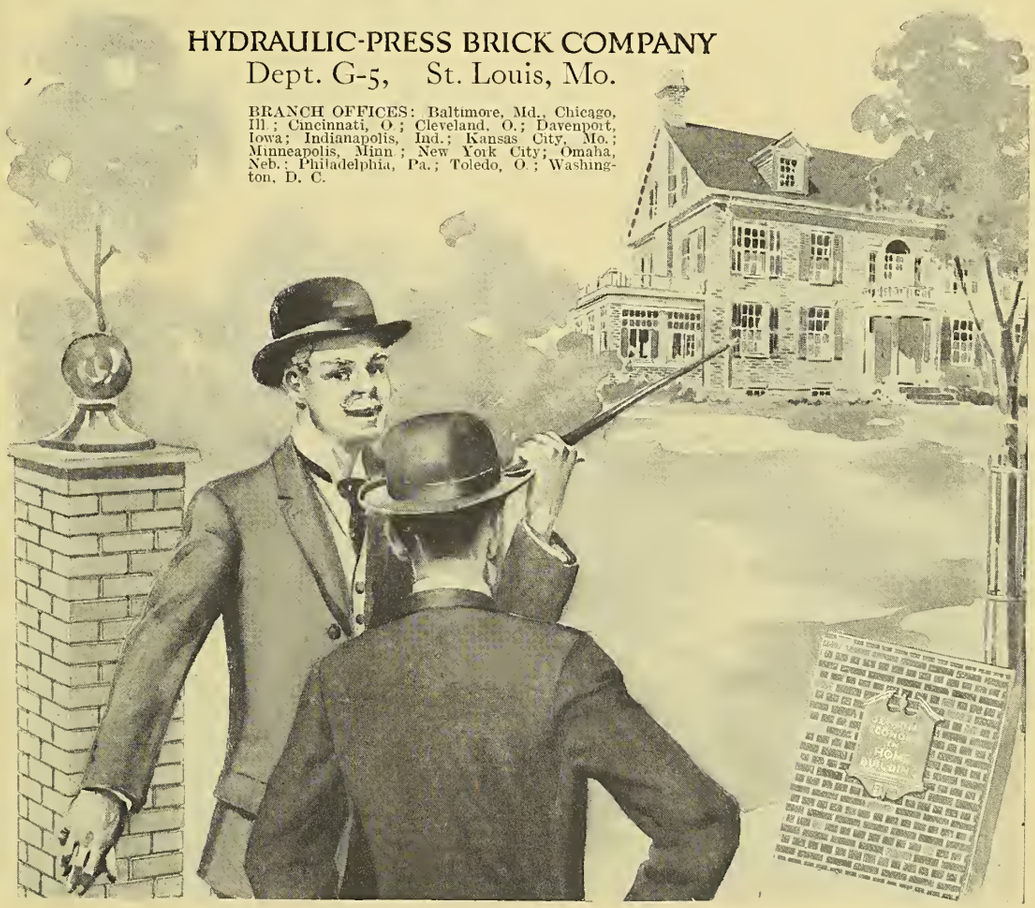
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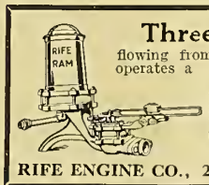


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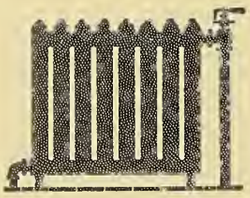
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manner. As seeds usually rot, if at all, before they sprout, this frequently saves the gardener very aggravating disappointments—and incidentally his opinion of his seedsman. When seed is soaked in this way, it must, of course, be planted at once after being removed from the water. Even if it has sprouted so that the embryo taproot is visible it will usually come through all right.

Although I have thus gone into detail about early and late planting, which covers a period of eight weeks or more, of course the real garden work—cultivation—will have begun long before the planting is finished.

The planting itself is just play—and this is as it should be. That is, in fact, the spirit which should continue through the whole season's garden activities, and without which neither you nor your table will get one hundred per cent. dividends from it.

The only way to prevent your garden operations from becoming laborious and flat and stale, if not unprofitable, is to keep things from getting ahead of you at any stage of the game. And the only way to prevent this is to start in in earnest at the very beginning and to keep things cleaned up in a businesslike, methodical way. By far the best method of doing this is to have a regular time, whether it be fifteen minutes or an hour and a half, or ten minutes before breakfast in the morning and ten minutes before dinner at night, in which to do your gardening. Even with much planning and careful work, for the first season or two you will probably attempt more than you can properly look after. If, however, for any reason at any time you find that the work is beginning to get ahead of you, that something has got to wait over for tomorrow or the next day that ought to be attended to at once—then take my advice and get someone to help you now until you are again fully caught up with the work. A dollar or so spent for extra assistance at such a critical moment will often save you many dollars' worth of vegetables and many hours of what is the most laborious and discouraging work I know of—trying to catch up with a crop that has once got away from you. Most especially should every Saturday night see the garden cleaned up trimly and neatly, for every gardener knows that the weeds will grow as much and insects multiply to as inconceivable an extent during one Sunday as in six long week days. For there is only one way of keeping the weeds from getting at least a little ahead of you, and this is to get ahead of them.

After the earliest crops are put in, such as onions, beets, spinach, oyster plant, parsnips and so forth, the beds will undoubtedly appear so fine and clean and smooth that it does not seem possible that they would ever cause you any trouble. Long before the seeds which you have just put into the ground will have germinated and have pushed above the surface, thou-

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sands of little weed seedlings will have been finding their way out to the light—if you give them a chance. In the old-fashioned method of planting by hand it was practically impossible to do much in the way of fighting them until the legitimate crops got far enough advanced to mark the rows; where the seed drill is used, however, the rows are plainly marked by the track of the roller so that no such delay is necessary. Just as soon after planting as the first crop of weeds has developed enough to be visible—five to ten days according to conditions—put the disc attachment on your wheel-hoe, using preferably the double-wheel type which will straddle the row, and go over the beds carefully, cutting up all the soil between the broad rows left by the roller of the seed drill. This can be done to perfection with the disc attachment, as they are so adjustable that they shave right up to the desired line without throwing a particle of dirt over it. You cannot do this at a very rapid rate, but it will nevertheless be traveling as with the winged heels of Hermes compared with the tortoise pace of weeding on hands and knees. Then, if you possess, as you should, a "weeder attachment" for the wheel-hoe, you can quickly and lightly stir the upper quarter inch or so of soil in the rows *directly above* where your seeds are planted. But in doing this, of course, you must take great care not to go deep enough to disturb the legitimate seedlings.

The work where plants have been set out can be done more easily, but it is just as important. A few days after the plants have been set, go over the surface both between the rows and between the plants with the "rake" attachments to the wheel-hoe, or with the ordinary, iron garden rake. It is not necessary, for the first couple of times, to go deep—half an inch or so will catch all the sprouting wild turnip and other early intruders; and you can do ten rows in this way in the time it would take you to hoe out one by hand after the weeds have grown even a small size. You must keep in mind that all the pains you have been to to make your one hundred per cent. garden rich and fine has put it in a fine condition to produce a one hundred per cent. crop of weeds if you do not keep the upper hand and maintain that religiously eternal vigilance which is the price of peace.

And this hint to the beginner is a valuable one: When, as is sometimes the case, he will have to choose between going after a crop of weeds just big enough to slaughter by the method mentioned, and doing some planting, he will be usually taking the wisest course by attending to the weeds first.

It is pleasanter, of course, to plant than to grub around uprooting the rank intruders, but the task must be done. The following table for the planting of late vegetables may be of assistance to the average gardener, and its careful reading is recommended to those who would get the most out of their gardens.

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Solid Porcelain Compartments

which can be kept free of breeding places for the disease germs that poison food which in turn poisons people. *Not* cheap "bath-tub" porcelain *enamel*, but one solid piece of snow-white unbreakable porcelain ware—nothing to crack, craze, chip, break or absorb moisture—but *genuine* porcelain, *over an inch thick*—as easily cleaned as a china bowl—every corner *rounded*—not a single crack, crevice, joint, screw-head or any other lodging place for dirt and the germs of disease and decay. Send at once for

FREE BOOK About Refrigerators

Which explains all this and tells you how to materially reduce the high cost of living—how to have better, more nourishing food—how to keep food longer without spoiling—how to cut down ice bills—how to guard against sickness—doctor's bills.

Refrigerators

IN BUYING A REFRIGERATOR there are three things you should insist upon getting—absolute Sanitation, Efficiency and Economy. Our lines possess all these features, with linings of glass, metal or vitrified steel; perfect circulation of dry, cold air, and perfect drainage. We shall be glad to help you select the refrigerator best suited to your particular needs.

Housecleaning Hints Brooms, Brushes, Dusters, Chamois Skins and every preparation and material for cleansing and renewing Furniture, Metal, and Glass. Carpet Sweepers, Vacuum Cleaners, etc.

LEWIS & CONGER

45th Street and 6th Avenue, New York

A striking example of modern return to the classic in outdoor decoration is shown in this Garden Gazing Globe. A crystal ball mounted within easy reach of vision on a pedestal of chaste and artistic design.

The Garden Gazing Globe

is a stately and beautiful garden ornament. It reflects all the shifting charms of the landscape. Here is one of the many letters from delighted owners.

"I am more than pleased with it, and the landscape views developed in it are not only interesting to ourselves, but are enjoyed by all of our friends."

May we send descriptive booklet and circular, with prices, to-day?

Stewart Carey Glass Co.
INDIANAPOLIS
IND.



—marless

—noiseless

—scratchless



Make sure the word "Feltoid" is stamped on each wheel.

DON'T abuse your expensive hardwood floors and rugs. Unshod furniture—or furniture with ruinous hard-wheel casters — digs and mars and scars. The consequent damage is great—and unnecesary.

"FELTOID"

Casters and Tips

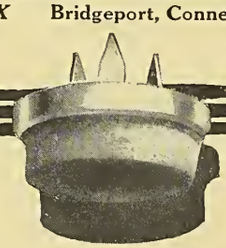
protect the finest floors and rugs. They are noiseless — scratchless — marless. Made of a specially prepared material which is very firm yet smooth and resilient. "Feltoids" wear indefinitely.

To equip your furniture with "Feltoid" Tips and Casters is a real economy. To see that all new furniture you purchase is fitted with "Feltoids" is essential to floor-protection and beauty.

Get them at hardware and furniture stores. Write for the "Feltoid Book No. 12." It tells about "Feltoids" for every possible need in your home.

The Burns & Bassick Co.

Dept. X **Bridgeport, Connecticut**





Before Installing.

THE

JONES & HAMMOND

Underground Garbage Receiver

Solves Your Garbage Troubles

The Receiver Without a Fault.

CONSTRUCTED ON SCIENTIFIC PRINCIPLES

For sale by leading hardware dealers, or write to manufacturers for circulars and prices.

JONES & HAMMOND

75-79 Newburn Ave., Medford, Mass

Planting the Garden—the Late Crops.

Vegetable.	Note.	Variety.	No. Rows.	Space, Ft
		SATURDAY, MAY 10TH.		
Corn, Ey.	E	Golden Bantam	1½	2x4
Squash, Sum.	E	Mammoth White Bush	½	
Potatoes, late	E	Gold Coin (7), Uncle Sam (3)	10	3x27
Lettuce	A	Wayahead	½	
Radish	A	Crimson Globe (¼), Icicle (¼)	½	1
Bean, Ey.	A	Stringless Greenpod (½). Giant Greenpod (½)	1	1½
			14	38½
		SATURDAY, MAY 17TH.		
Beans, wax	A	Brittle Wax, New Kidney Wax	2	1½x1½
Beans, lima		Fordhook	1	2
Beans, pole	W	Burger's Stringless, "Sunshine"	1	4
Beets	W	Dark Stinson	4	3x3¾
Carrots	W	Coreless	4	1x3
Peas	E	Blue Bantam, British Wonder	2	2x3
Corn, Ey.		Golden Bantam, Howling Mob	2	2x4
Tomatoes, Ey.		Bonny Best	⅓	
			16⅓	30¾
		SATURDAY, MAY 24TH.		
Tomato		Dwarf Giant	⅔	4
Cucumber	X	Davis Perfect	½	3
Muskmelon	X	Netted Gem, Spicy..	½	
Beans, lima	W	Burpee Improved ...	2	3x2
Beans, pole	E, W	Giant Podded Pole..	1	4
Lettuce		Brittle-ice	½	3
Okra		Klecky's Favorite	½	4
Watermelon	X	Fordhook Early	½	4
Squash	X	Fordhook	½	
			6⅔	23
		SATURDAY, MAY 31ST.		
Corn	E	White Evergreen ...	2	4x4
Pepper	E	Ruby King	½	3
Egg-plant	E	Black Beauty	½	
Turnip		Amber Globe	2	2x1½
Brussels Spts.	D	Danish Prize	¼	
Cauliflower	D	Dry-weather (Danish Giant)	¼	1
Peas Cabbage	D	Savoy, Danish Roundhead	½	
Peas		Blue Bantam, British Wonder	2	3x3
			8	21½

NOTES.

A—Will be removed in time to be followed by some late crop.

B—Planted as a companion crop between rows.

D—Sown in seed-bed, to be transplanted later to permanent position.

E—Good to increase if a surplus for selling is desired.

W—Any surplus may be kept over for winter use.

X—If possible, plant far apart from each other; in rows or hills.

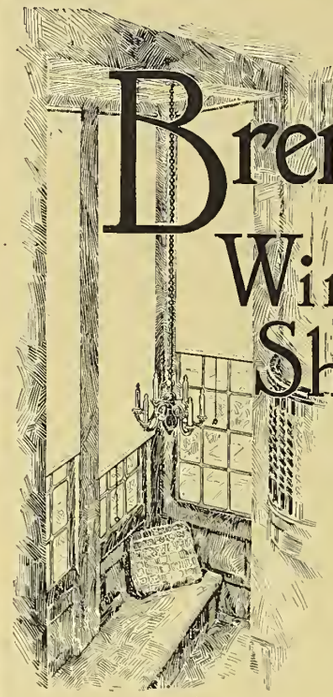
The Part Transplanting Plays in Garden Making

(*Continued from page* 371)

is possible to come much nearer to it than is commonly the case, if only the real effort is made. As a start, dig a hole a little bit broader than the spread of roots requires, and a little bit deeper than their depth. This is the most important thing, right at the beginning. Then turn the plant down on its side and go around and look directly into the root mass from below. Nine times out of ten you will find yourself looking into the apex of a rudely pyramidal concave, formed by the downward thrust of the roots as they grow out from the trunk. There will be roots in the midst of this, of course, but the general form will be there, quite plain.

Make an earth pyramid on the floor of the hole to fit into this concavity, drawing the earth lightly into a sufficient pile. Then lower the plant upon this, bouncing it up and down gently until it adjusts itself and forms ridges in the earth into which its roots fit. When this is finally done as well as it is possible to do it, determine

(*Continued on page* 432)



Brenlin

TRADE MARK REG. U.S. PAT. OFF.

Window Shades

Before you decide the shade question, go to the Brenlin dealer in your town, and have him show you the three popular priced grades of these now famous window shades.

For every important window choose the *Brenlin Unfilled* grade. Made of closely woven cloth, without the "filling" which in ordinary shades so soon cracks and falls out in unsightly streaks and "pin holes," a Brenlin Unfilled shade will last longer and make your window look better than any other shade.

Sun won't fade this shade nor water spot it. It is supple —not stiff, yet always hangs straight and smooth, and *really shades.* Made in many artistic tones to harmonize with any decorative scheme. For windows 1 yd. wide by 2 yds. long 75c. Special sizes and Brenlin Duplex—white one side, dark the other—made to order at proportionate prices.

For windows of less importance your dealer has the *Brenlin Filled* and *Brenlin Machine Made* grades, priced respectively at 55c and 30c for windows 1 yd. wide by 2 yds. long. They will be found by far the best window shade values at these prices.



Write for the Brenlin Book Today

It shows actual samples of Brenlin in all colors, and gives many helpful suggestions for the artistic treatment of your windows. With it we will send you the name of the Brenlin dealer in your town. CHAS. W. BRENEMAN & CO., 2982 Reading Road, Cincinnati, Ohio.

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Mail Orders.— If no dealer in your town can supply Brenlin, write us and we will supply you direct. We satisfactorily fill hundreds or orders by mail every year.



SILVER LAKE A Sash Cord

(Name stamped indelibly on every foot)

The man who builds a house without asking about the sash-cord to be used is laying up trouble for himself. Insist that the specifications mention SILVER LAKE A. Its smooth surface offers nothing on which the pulley can catch. Guaranteed for Twenty years.

Write for Free Booklet.

Don't Blame the Window Put in the Right Sash Cord FIRST

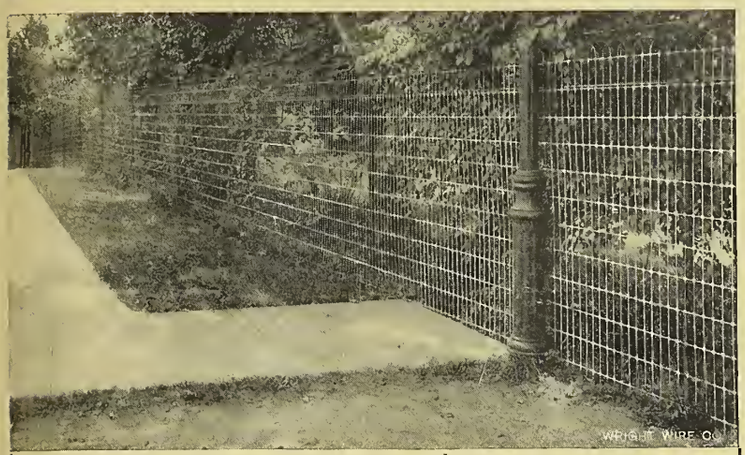
SILVER LAKE COMPANY

87 Chauncy St., Boston, Mass.

Makers of SILVER LAKE solid braided clothes lines.



"EXCELSIOR" TRADE MARK RUST PROOF



STRONG POINTS

A CHAIN is no stronger than its weakest link. A wire fence will last no longer than the unprotected spots which begin to rust as soon as they are exposed to the weather.

Excelsior "Rust-Proof" Fence

is strong at every point—in the tensile strength of the materials, in the security of the lock joint construction, in the method of erecting the posts and of attaching the fence fabric. But the strongest point of all in favor of Excelsior "Rust-proof" is the pure zinc coating which is applied after the fence is made, because it prolongs the life of the fence indefinitely.

Buy from any hardware dealer: but first write to the factory for illustrated catalog "C" and sample showing the "Rust-Proof" finish.

WRIGHT WIRE CO., WORCESTER, MASS.



For Quick, Sure Results Buy Moon's Hardy Plants

IT'S surprising what quick results a few of our well-rooted, strongly-grown, hardy plants will produce for you. No garden, for instance is quite complete without Phlox and Iris, now so much in favor. Of both these we have a truly choice lot this year.

By way of further suggestion, why don't you let us send you an assortment of 12 Hardy Chrysanthemums—the rarer kinds that are so welcome in their October bloom, after Jack Frost has played havoc with everything else.

Starting in with Iris and ending with Chrysanthemums, you can, by adding a few other plants, have one perpetual round of bloom the whole glad Summer through.

All Moon's hardy plants should bloom the first season.

Send for our catalog. It is rich in planting suggestions of all kinds. The prices are decidedly reasonable for such superior stock.

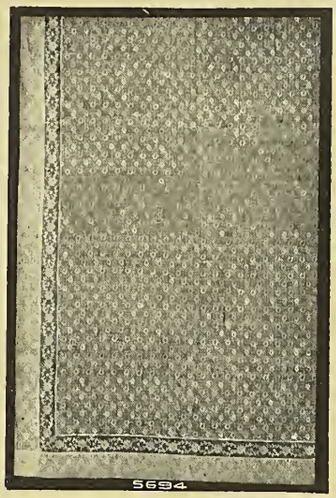
Get your hardy plants and trees now, or you will have to wait till Fall for safe planting.

The William H. Moon Co.

Makefield Place, Morrisville, Pa.

Philadelphia Office, Room "D," 21 South 12th St.







INEXPENSIVE COTTAGE CURTAINS

The finest assortment of Lace Window Curtains and Draperies to be seen in the United States, is here on display.

Every desirable material for beautifying the interior of the home is represented in our department devoted to Furnishings and Decorations.

SPECIALS

No. 5694—Dainty White Curtains, made from good quality Swiss with Insertion of Filet Lace, 36 inches wide, 2½ yards long, per pair **$1.90**

No. 11096—Scrim and Filet Curtains, especially appropriate for Living and Dining Rooms, made of fine quality striped Scrim, 44 inches wide, 2½ yards long. White or Ecru, per pair **$4.50**

FREE DELIVERY—*We will deliver these curtains without charge for mail or express anywhere in the United States*

McGIBBON & CO.

3 WEST 37th STREET NEW YORK

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Use Oxide of Zinc Paints

Good Paint Costs Nothing

(Dutch Proverb)

GOOD paint is paint that effectively beautifies and protects surfaces.

Unpainted structures rapidly deteriorate.

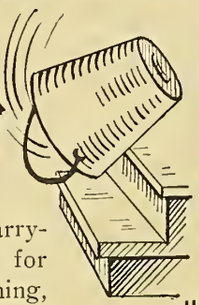
Good paint preserves them. Good paints all contain **Oxide of Zinc.**

THE NEW JERSEY ZINC COMPANY

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We do not make paint.
A list of paint manufacturers sent free on request.

GOOD BYE OLD PAIL!



No more lifting—carrying—lugging water for drinking, washing, bathing, fire fighting. Just step to the faucet and turn on hot or cold water.

Have Running Water Everywhere

in bath room, kitchen, stable, wherever it's convenient or necessary. A twist of the wrist will give it to you if you install a

Douglas Pneutank Water System

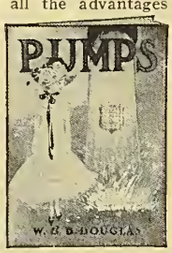
It is easy to install, simple to manage, cheap to purchase and needs next to no repairs. Can't freeze, burst, or spoil walls or building. Enjoy life with running water close at hand.

In the Pneutank System the pressure is always sufficient to throw a good stream to the top of barn or ridgeboard of your house. It has many advantages over attic reservoirs, wind power towers and tanks.

Write now for

Douglas' Free Book It's a Great Help

to people living in the country or suburban districts, as it explains in detail all the advantages and economy of operating a Douglas Pneutank Water System. Write for book on a postal and mail it NOW to



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Gentlemen:—Enclosed please find $1.00, for which send me your special offer of one copy of "Planning a Trip Abroad," and TRAVEL for May, June, July and August.

Name.....

Address.....

(*Continued from page* 430)

where on the bole the surface of the ground will come, after the hole is filled in, by laying a plank or a straight edge across the hole from side to side, close up to the plant. The earth will, of course, come to the level which this touches. Raise or lower the plant as may be needed, by putting on or taking off earth from the earth cushion. The surface of the ground must come at the old surface mark on trunk or stems.

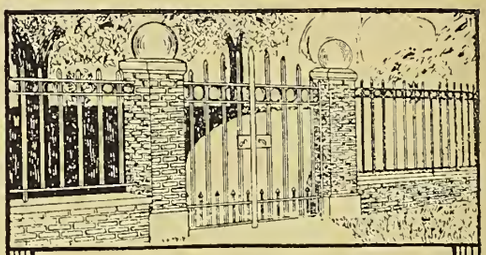
Arrange all long roots in the direction which they very plainly indicate they have been traveling, being particularly careful not to twist them nor bend them sharply, nor to allow their tips to lie turned up against the walls of the hole wherein they are being planted. Root tips naturally turn down, and a root is always deeper in the ground at its tip than anywhere else along its length. Never overlook this point—and never allow a helper to shirk on the breadth of the hole dug, for it is the too narrow hole that means root tips turned skyward, in spite of anything that may be done to avoid this.

Trees and shrubs that arrive in their packing from the nursery have their roots pressed down so close sometimes that it is hard to tell how they naturally would like to rest. But close examination will usually reveal their directions without much doubt; and if this does not, plunge them into a broad tubful of water or liquid mud until they are softened enough to resume their natural positions. Then let them dry sufficiently to prevent the earth from adhering to them in mud clods as they are lowered into it; and plant just as you would plant a freshly-dug specimen.

All that applies to shrubs and trees, and the restoration of their roots to their original positions when transplanting, of course holds good whatever the plant that is to be moved may be. But perennials and flowers generally, not being woody, recover more readily from the shock of transplanting, and most of them suffer less from it than the heavier vegetation. Even some of these plants, however, cannot endure it. Most of them have the same long tap root growth already referred to in trees, but it is not altogether this which affects their transplanting. Some are apparently too sensitive to the handling itself to live after being subjected to it.

Anything which is offered by a greenhouse or nursery, however, is pretty sure to be suitable for handling, and such plants may be set out with a fair degree of certainty that they will live and thrive. Do not undertake to transplant at midday when the sun is high and warm, but rather do the work early in the morning and shade the plants all day, or leave it till late in the afternoon. My own preference is for the time just around sunset, when the transplanted specimens may be watered and left to the cool soothing night to adjust themselves and become accustomed to their new position. Any sort of shade will do, when shade is necessary,

(*Continued on page* 434)



Iron Railing

Entrance Gates and Wire Fencing of all designs and for all purposes.

Unclimbable Fences for Estate Boundaries and Industrial Properties.

Tennis Court Enclosures a specialty. Fences for paddocks, poultry runs, etc., ornamental iron and wire work.

No order too large or too small for us to handle.

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A WORD TO THE HOUSEKEEPER

Last year you had to take the second-best in your improvements because the best was beyond the reach of your designers and there were no experts in your locality.

House and Garden is the advisor you need if you contemplate improvements of any kind about the house or garden. It covers the field of decoration, furnishing and gardening with authority, artistic taste and precision, and its whole purpose is to make the home more beautiful and more livable. The beauty of the magazine and its illustrations will be a pleasure for you, even if you do not plan any changes or improvements just now. Let your subscription start with April 1st, and include this helpful expert among your regular visitors.

$3.00 a year; 25 cents a copy.

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The EVERETT PIANO

One of the three great Pianos of the World

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FOR garages of stucco or concrete, as well as for stucco houses there is nothing that protects concrete from moisture and consequent hair cracking so well as



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Bay State Brick and Cement Coating

"Lights Like the Sun"

a New England product that is used in the biggest textile mills, and on some of the finest residences not only in New England, but all over the country.

The material is a fire retarder and a great reflector of light. Ask your dealer for it. If he cannot supply you write us. Drop a postal for the interesting little story B on painting—The House that was Reformed.

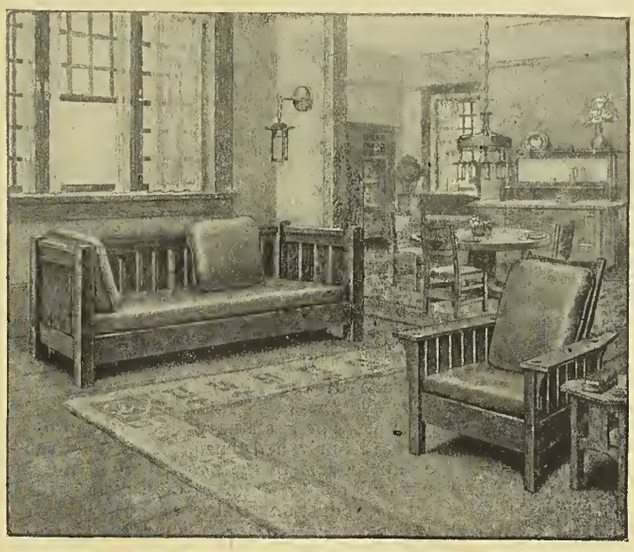


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Paint & Varnish Makers & Lead Corroders

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Inquiries by mail are given prompt attention.

R. J. HORNER & CO.

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20-22-24-26 West 36th St., Near Fifth Ave., New York

A Big Novel of an American Girl

Gertrude

BY EDWARD HUNGERFORD

Author of "Little Corky," "The Modern Railroad," etc.



From colored frontispiece by George Brehm

Here is a story of distinct novelty—telling first of the rejuvenation of an old country tavern into a modern and comfortable inn and then of the rejuvenation of the family that moved into it. The story centers about Gertrude, the girl who made herself strong and winsome and then conquered the great tragedy of her own life. As a woman of great power and beauty, she is comparable with the character *Helena Ritchie,* of Mrs. Deland's novel. Throughout there runs a strong love interest. The book itself is a page of America.

$1.25 *net, postage* 11c.

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—Brooklyn Eagle

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BY ALEXANDER BLACK

Author of "Miss Jerry," "Richard Gordon," etc.

Six years alone on a little island in the Indian Ocean! What could Zalia Thorne know about love—having been marooned when she was twelve years old? How could she have existed in the great loneliness of this tropical island? Barry Carshall, a wanderer from New York, is shipwrecked and finds Zalia. And in the life of these Isolated Two—their adventures and the situations that arise—there is wonderfully appealing romance. The dialogue sparkles and glows like the embers of a driftwood fire.

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Art Products of a High Degree of Excellence and Exceeding Good Value

With wealth of tone and unequaled construction, the French & Sons' Player Piano places at your finger-tips the complete technique of piano-playing—ability to sound correctly the notes of the most difficult composition—to play loud or soft—fast or slow—staccato or legato—to "bring out" the melody and subdue the accompaniment. **Any musical effect is possible with this player.**



As a hand-played instrument, not the faintest trace of mechanism is noticeable—it is superb. **As a player the French is incomparable.** It has many automatic devices not possessed by other players. One touch of the hand changes it from a player to a hand instrument and vice versa, locking the keys and bringing the pedals into position—all automatically and accomplished in an instant.

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Villa Lante, Bagnaja, Italy.

The Italians of the Renaissance designed gardens that delight those who love the beautiful and baffle those who have tried to surpass them. Their statuary and garden ornaments, with rare exceptions, are unrivalled masterpieces that lend themselves as well to-day as in the past to the adornment of the formal garden.

Our unusual collection of models made of Pompeian stone cast in perfect reproduction of these Old World masterpieces affords you the opportunity to make your garden a source of constant pleasure.

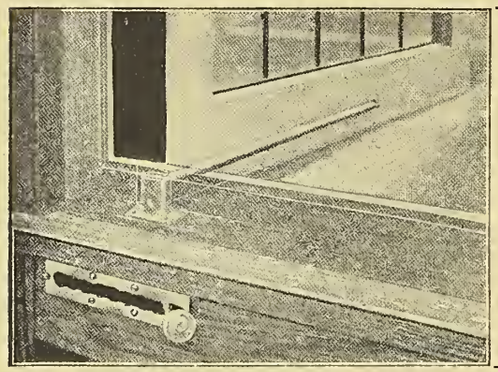
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The Largest Manufacturers of Ornamental Stone

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When open it's all window; not half a window. And there's no ugly joint in the middle to spoil the view and prohibit artistic glazing.

To open and close it with this HOLD-FAST ADJUSTER of ours is a positive pleasure, *for you don't have to open the screen.*

Don't build without our Handbook.

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"Gaumer Lighting everywhere, follows the evening glow"

IN planning a beautiful room, bear in mind that *everything* should contribute its part toward harmony.



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GAUMER
Hand Wrought
Lighting Fixtures

have been found indispensable in thousands of homes where lighting fixtures are tastefully *selected.*
By day, Gaumer Fixtures form a pleasing harmony with the furniture and decoration; in the evening, Gaumer Lighting displays them to advantage. Our art-craftsmen are an acknowledged authority on hand-wrought fixtures.
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JOHN L. GAUMER & CO., DEPT. A
22D AND WOOD STS., PHILADELPHIA, U. S. A.

LIGHTING FIXTURES

(*Continued from page* 432)

provided it is not a smother. Inverted peach baskets set over a plant are not advisable; whatever you use, let it be up from them so the air can reach them.

Usually the soil is in the best condition for transplanting on the day after a rain; but it is not necessary to wait for this, in order successfully to transplant. Dry soil is preferable to too much moisture, and the time just before a shower is usually ideal, both as to soil and overhead conditions. It is not possible to time the work quite as exactly as this, ordinarily, however; so a good general rule is to choose fairly dry soil and water freely at the time, after the holes are filled, just as with trees or shrubs.

The transplanting of cone bearing trees, otherwise evergreens, is not seasonable at this time of year, these being more generally moved late in August or September. Whatever may be planned in connection with them, therefore, should be planned for these months.

TREES MOST EASILY TRANSPLANTED

Tilia (linden) in variety,
Catalpa (catalpa),
Betulia (birch),
Aesculus (horse chestnut),
Robinia (locust),
Acer (maple),
Platanus (plane tree),
Populus (poplar),
Salix (willow).

TREES DIFFICULT TO TRANSPLANT

Fagus (beech)—Only nursery trees can be transplanted, and these must be cut back severely at the top when transplanted.

Hicoria (hickory)—Can only be transplanted when small and nursery-grown.

Liquidamber styraciflua (sweet gum)—Transplant only when small, and in the spring.

Quercus (oak)—Must be closely pruned when transplanted, so that no more than a quarter of its *buds* remain; let some of these be at the ends of the branches, removing principally side shoots.

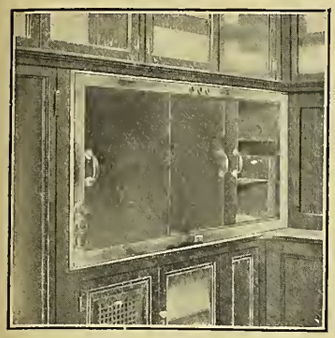
Liriodendron tulipifera (tulip tree)—Transplant in spring only, and prune severely.

Homes that Architects Have Built for Themselves

(*Continued from page* 369)

of Portland cement and sand or pulverized stone when mixed with water can be applied to any surface. The outside walls of the house may be in stone, brick, tile, concrete or wood, any of which may be covered with stucco. When properly made and applied it is durable, and affords a warm covering in winter and a cool one in summer. It lends itself to interesting color schemes of creamy or soft gray tones. Even white walls can have a pleasing variation in tone, for they improve with age as the weather softens the too-clean appearance of a newly-stuccoed house.

(*Continued on page* 436)



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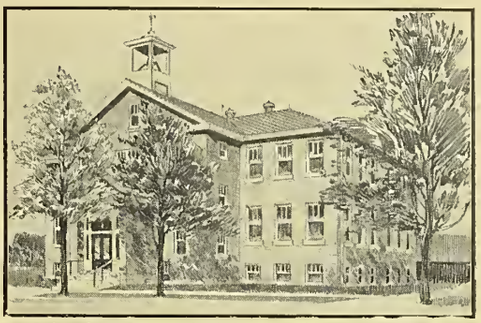
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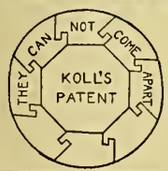
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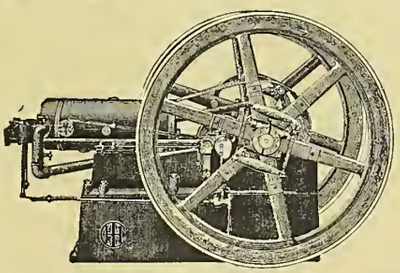


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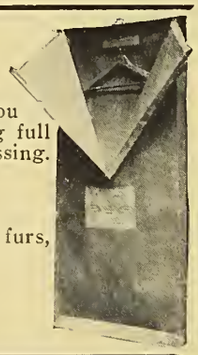
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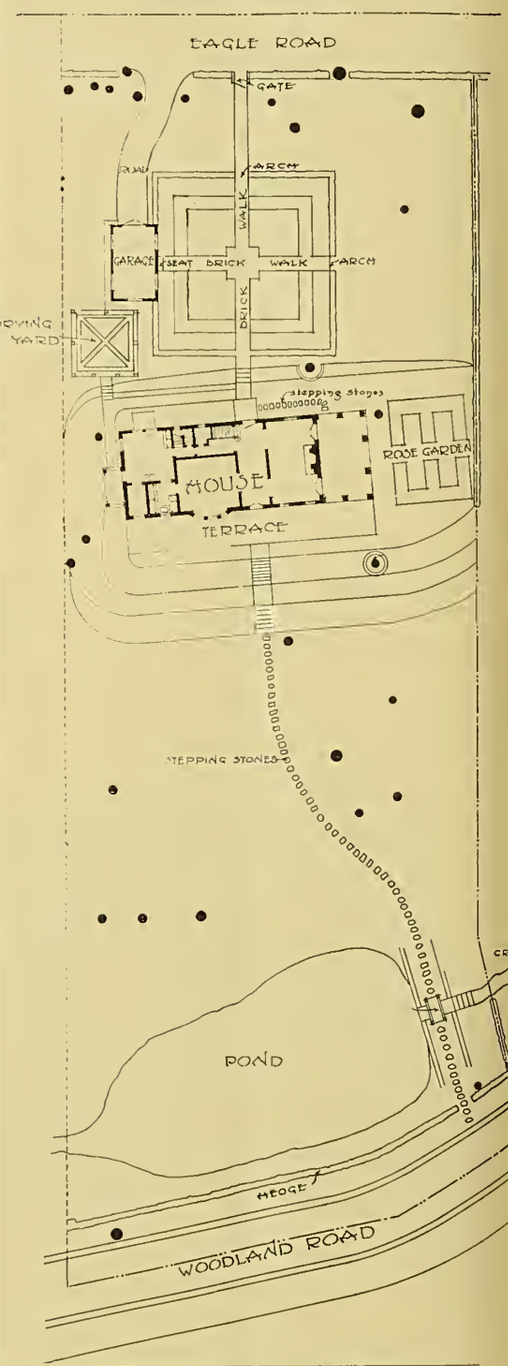
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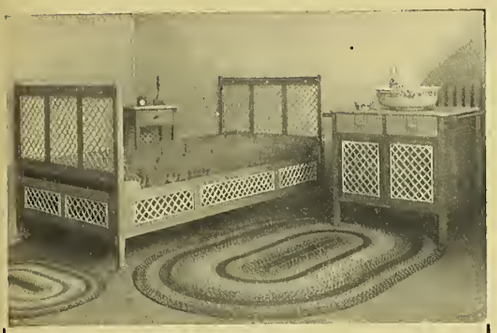
(*Continued from page* 434)

The increase in the cost of lumber, the high cost of insurance for a frame house and the danger of a whole family being burnt to death in a night should make all of those who are interested in the building of artistic and comfortable homes look into the merits of a surface that has the enduring qualities of stucco.

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(*Continued on page* 438)





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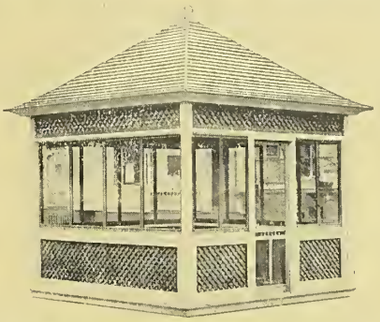
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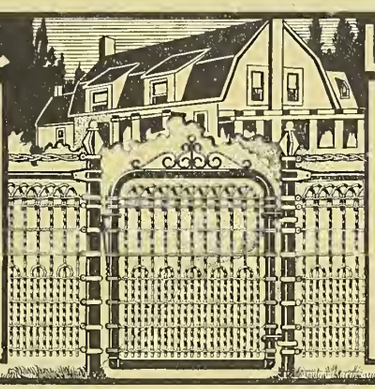
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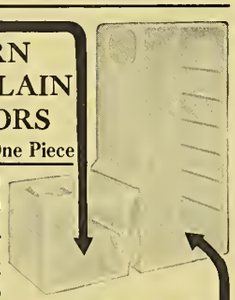
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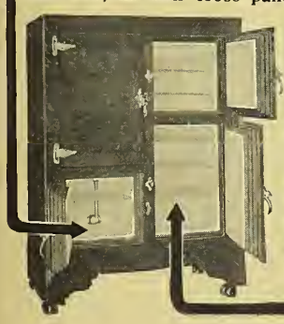
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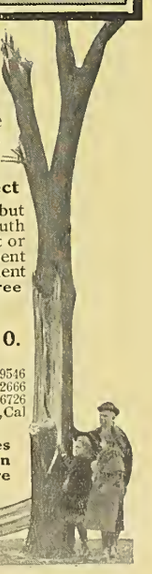
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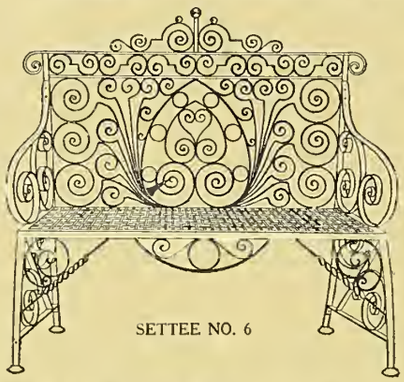


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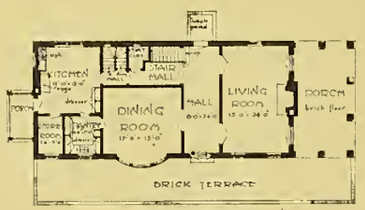
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(*Continued from page* 436)

tunity is given for dampness to get behind it, for the action of frost is very injurious.

The white surface of the architect's house reminds one of the farmhouses in the south of England, with their roofs mellowed to a warm and glowing red by action of the sun and rain of more than two hundred years. The house is in accord with its surroundings, and shows intelligence in planning and the effects of time in bringing to completeness, harmony between dwelling and environment.

There is evidenced the knack of introducing some little detail that gives the individual finishing touches. Whether it be in the pergola-hood over a door or the setting of shrubs against the wall of the house, he strikes a distinctive note while still keeping safe within the bounds of suitability. Often a note of interest is introduced by a metal T-bar in the rugged chimney built at one end of the farmhouse. The heavy wide eaves sheltering the upper windows are another noteworthy, distinctive feature of Mr. Keen's own home. The contrasts of color, too, are very delightful. The red brick terrace overlooking an old-world garden contrasts with the vine-covered white walls. The white trims of doors and windows are brought into relief by the careful placing of shrubs, while the green and white striped awnings give a cool and restful appearance to this charming home.

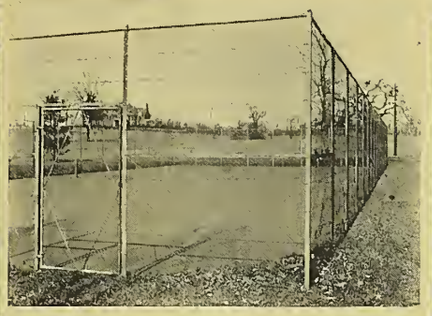


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There is a special joy taken in the possession of the terrace porch, which he speaks of as "a place where we enjoy the

(*Continued on page* 440)



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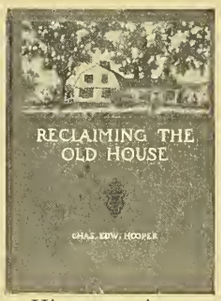
Wishing to keep a constant supply of fresh vegetables upon the table and to grow those that were the most tasty, the author of this book enlisted the co-operation of a clever cook and a capable gardener and gives the reader the fruit of her experience. The book tells what vegetables and fruits are profitable to grow, and tells how to transform them into delicious courses, tempting salads, preserves and jellies. *Illustrated.* $1.25 *net; postage* 15c.

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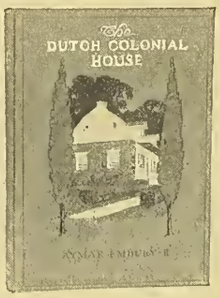
All through this country—especially the New England States—there are scores of rambling old houses which, abandoned by the unknowing, are merely waiting for you to come along and turn them into great cheerful homes; homes that hold something of the atmosphere of other days. Mr. Hooper not only tells you how to find and choose your old house, but how to reclaim it and retain that age-old feeling of cheer and comfort.

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(*Continued from page* 438)

best outlook of sloping lawn, trees, pond and running brook. A place to sit when the sun is down in the cool of the evening. A place to exercise when the grounds and walks are too wet or unfit to walk upon. A place for the children to play; with all those advantages there is no loss of light or sunshine in the first-floor rooms."

In studying the general layout of the grounds one cannot help being impressed by the completeness of the layout of the garden with its many delightful accessories that make for beauty in a country home, and the convenience of the planning of the house itself. When discussing the front and rear elevations, Mr. Keen remarked, "I much prefer the English method of describing the several fronts or elevations of a house, 'south-front,' 'north-front,' 'east-front,' etc. In our case northeast or entrance front with simple doorway and fewer windows and its lattice to form a vine-clad background for the garden at some later day, and the southwest or living front, with its broad terrace and many windows, gives one of the best outlooks and exposures."

In looking at the photographs of the interiors one realizes at once the home-like atmosphere of Mr. Keen's home. A few questions as to his reasons for providing certain simple furnishings elicited the following remarks:

"As in the architecture, we love the simple Colonial furnishings, they appeal most to us as most appropriate for a country house. We love rag carpets and use them for bedroom floor coverings throughout the year. The interior photographs were taken of the house in its summer garb, when we replace our regular rugs in the living rooms with rag carpet as well. The hall paper is a reproduction of an old Colonial one, and most appropriate for the kind of house and furnishings. It is also most suitable for a hall paper, as it looks equally well on a plain wall without pictures as it does with them. It is not a varnished paper, nor a tile effect. It is much like blocks of stone with enough ornament to relieve the stiffness."

The sun-room is one of the features of this attractive home, and is a delightful lounging place, reading-room, or play-room for the children; there are no tiresome little things around that the children must be cautioned not to break, but comfortable, serviceable chairs, a pleasant distribution of growing and hanging plants and cool-looking awnings.

The living-room is dignified with its walls of grasscloth relieved by the white painted woodwork. The detail of the mantelpiece is perhaps too perfect to be termed a "farmhouse type of room," but for the living-room of a country gentleman it leaves nothing to be desired. The paneling above the mantel is also worthy of note. Some heirlooms in the way of furniture, old china and brass made a good beginning, and the Colonial lamp is an interesting piece.

(*Continued on page* 442)

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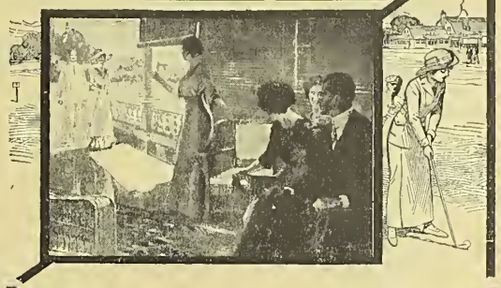
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Bungalows, Porches, Summer Furnishing, and many other house matters will be specially covered, and there will be the usual vital articles for the garden enthusiast

(*Continued from page* 440)

The dining-room, with its ladder-back Chippendale chairs, has some perfect specimens of Georgian furniture. It has an old-world flavor with its portraits of ancestors in their soft gold frames. The use of an old wash-hand stand for a serving table is suggested by the narrowness of it, but possibly it is part of an old sideboard cut down to fit the spot where it now stands. Old silver appeals to all of us, especially when it is so perfect in design as here.

The bedroom with its dainty white striped paper is charming. A dainty flowered border reproduces the colors in the curtains, and the ladder-back Colonial chairs are just right in a bedroom of a house built in farmhouse type.



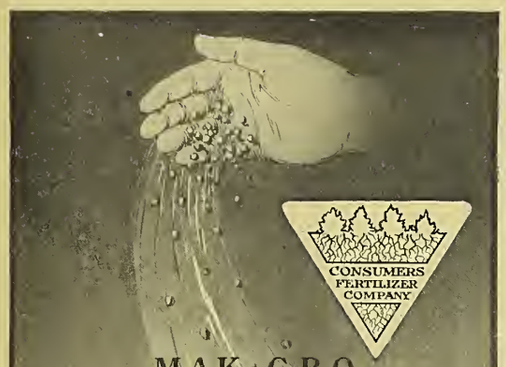
How to Attract Martins and Other Birds

Seventeen years ago, impelled by love of our native birds, I began to build houses for them on my grounds. I had made a study of birds as a boy, and felt that the little fellows should be encouraged to come back to us; that we should do something for them to atone for our mistake in allowing the sparrow to monopolize our gardens and our generous scraps of food.

My first birdhouse was built to attract the purple martins. This was erected on my place at Kenmore Avenue, Chicago, which is in the heart of a district called "Flatville." I had never seen martins in Chicago, but as a boy I had won them to a little house I built in the country.

Two days after the new house went up in Flatville two martins came around and investigated it. They flew about the house all day, but evidently their requirements were not met, for they left and never returned. Something about the house made them timid. Several days later three more martins came, circled about, and finally went into the house. They also betrayed evidence of fear — and flew away. I climbed up to the house and tried to guess what it was that excited the birds' distrust, but could not. Next day two more martins came and perched on the roof. English sparrows drove them away; the sparrows found the house attractive and occupied it. No more martins that year.

During the next winter I designed a house which the birds could enter on either side and go straight through. When the first martins came I saw that I had hit upon the right plan. They took up a lease. When a sparrow pursued them they dove into the house and immediately came out on the other side. The sparrow waited at the front door with the patience of stupidity. It was amusing to watch the little pirate's face. Joseph H. Dodson.



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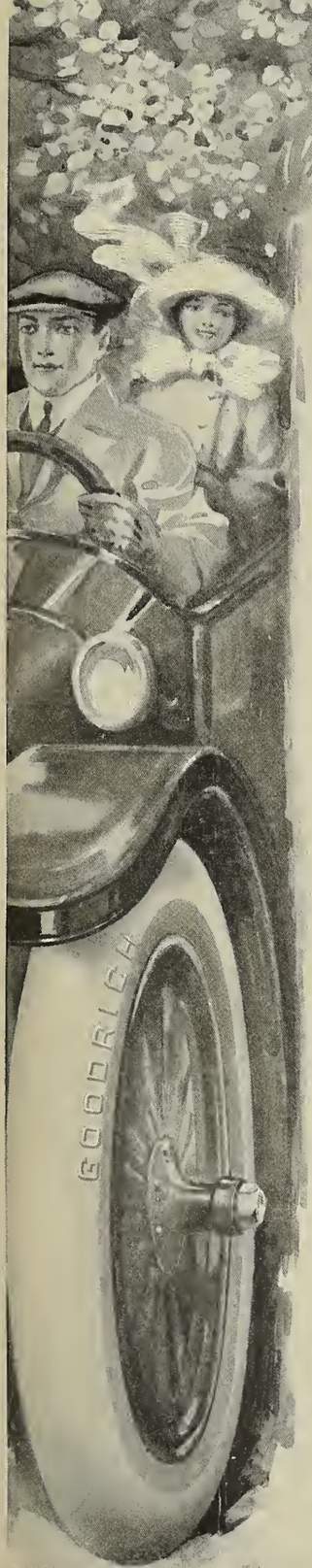
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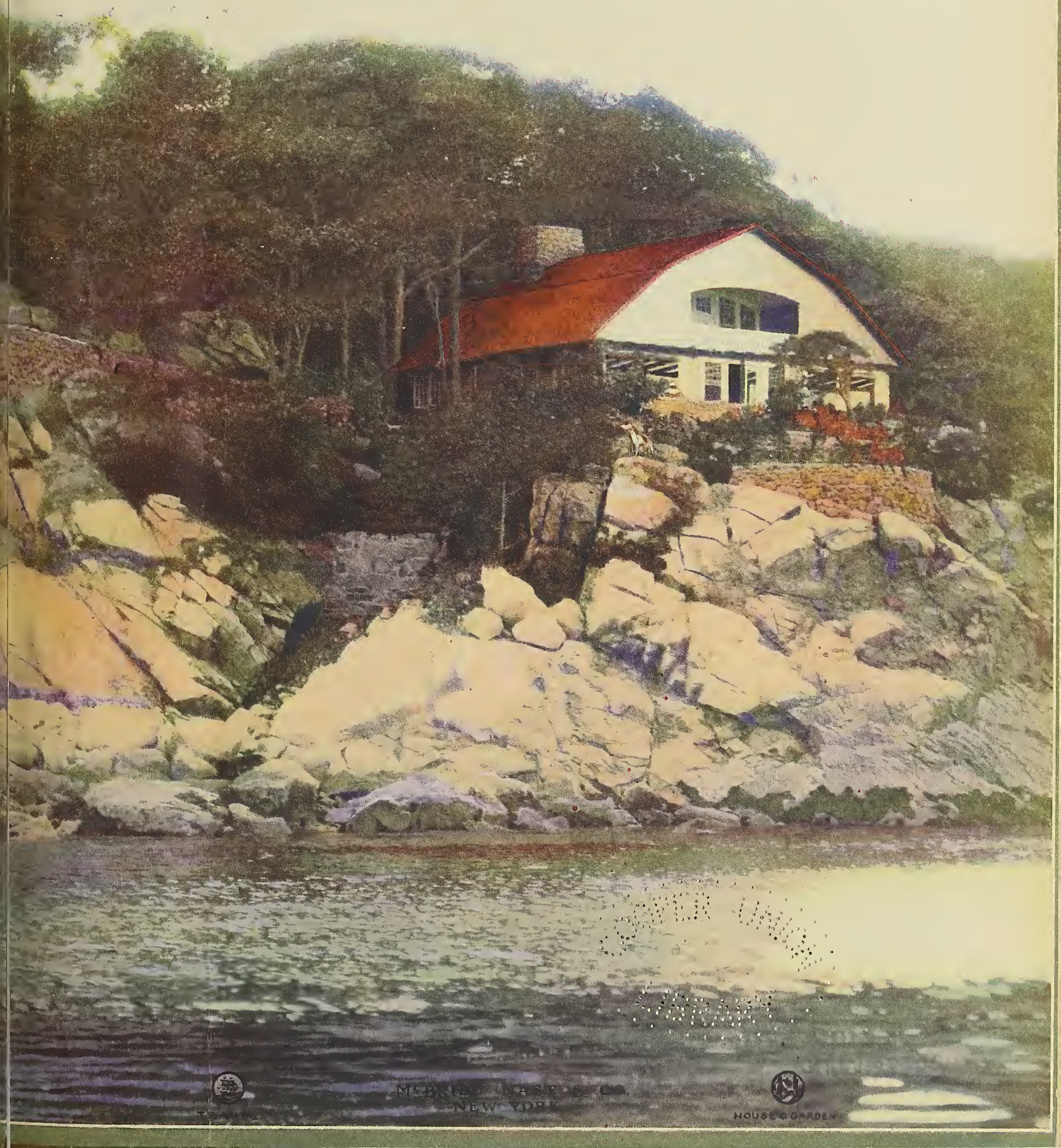
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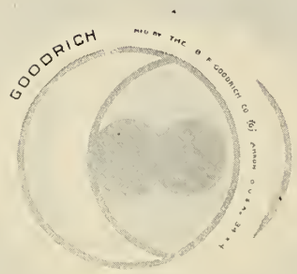
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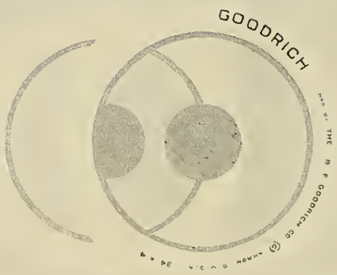


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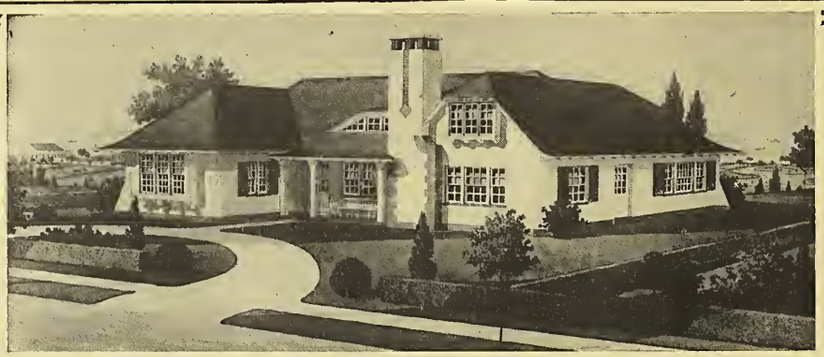
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HOUSE AND GARDEN
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The Forests of New York Threatened By the Brown-Tail and Gipsy Moth

FOR several years Massachusetts has been spending large sums of money in fighting the Brown-tail and Gipsy Moths. These insects have spread westward in their devastating course and are now reported from a point not far distant from the eastern boundary of New York. In February a Conference was called in Boston by the State Forester of Massachusetts for the purpose of bringing together not only those actually engaged in the fight with the Gipsy and Brown-tail Moths, but those who are sure to be concerned in the near future. The New York State College of Forestry at Syracuse University is investigating the work of these insects and Dr. M. W. Blackman, Forest Entomologist of the College, was its representative in the Conference in Boston and is ready to take up the fight against these insects when they appear in this State.

Interesting facts were brought out at this Conference as to the spread of the Gipsy Moth. It is very certain that New York and other States about Massachusetts will soon be reached by these destructive insects and that unless more effective means are taken they will destroy not only forest trees but shade and ornamental trees over large sections of the State. As shade tree pests these insects can be controlled by spraying and destroying egg clusters but these methods are used only at considerable expense and must be continued indefinitely. It seems probable that as soon as the parasites and diseases introduced from abroad which work upon and destroy these insects have become fairly established that they will aid man greatly against future serious outbreaks.

The Gipsy Moth problem of the future in the State of New York is a Forestry problem as the insect cannot be fought in the forest by spraying but must be controlled and eventually eliminated by proper methods of forest management. Certain trees such as the oak, willow and birch are apparently more favorable and often seem necessary for the development of the caterpillars of the moths. Methods of forest management can be used which will remove these trees from the forest and thus destroy the most favored food of the pests. With these methods of proper forest management must go strict quarantine against lumber, cordwood and nursery products shipped in from infested areas. Some effort has been made to establish a "dead line" to prevent further spread of the insect. A zone of timber consisting largely of white pine and other evergreens is selected and all hardwoods or broadleaf growth removed. As the insects are unable to complete their life history on the pines, they are checked and it may be possible to prevent their spreading northward into the Adirondacks, or into the Catskills, through the maintenance of such zones of

? Your Decorating and Furnishing Problems ?

SO many inquiries have been received in HOUSE & GARDEN seeking hints and advice for the decorating and furnishing of houses that some time ago we made the experiment of organizing this work into a special department. It has proved itself worth while by our final test — the satisfaction of our subscribers.

We wish to call your attention to the fact that we are prepared to attack the problems that bother you in the decorating and furnishing of your home. We invite you to solicit our services. The perplexities of furniture arrangement, and style; the proper treatment of walls; woodwork, floor coverings, lighting fixtures, and hangings appropriate to your need — these are the special fields in which we are prepared to give advice. Harmonious schemes in all possible completeness will be submitted. Wherever possible samples of the materials recommended will accompany the plans suggested.

We wish to assist those living far away from the great shopping centers to get ideas of the new and interesting things that are constantly appearing in the beautiful shops of this city. All the artizans of the world pour their products into this metropolis, perhaps HOUSE & GARDEN can show you the way through the maze of good things to the very one article your imagination has been seeking.

We hope in this way to give auxiliary information to that contained in the magazine — and to help practically those whom we have directed through our columns.

Requests for any information should be accompanied by return postage. The case should be stated as clearly and tersely as possible, giving enough data to make the requirements of the situation evident.

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coniferous growth. In the caterpillar stage the two moths do the greatest damage and the greatest spread of the insect occurs at this time. They are often blown long distances by the wind or carried by automobiles and other vehicles and much can be done in preventing this kind of distribution by keeping the road-side districts free of the caterpillars through spraying and the removal of their favored food plants.

The outbreak of the Gipsy Moth in this State in the summer of 1912 was not extensive and by prompt measures such as the removal of infested trees, spraying, etc., the colony was destroyed. It is entirely possible, however, that there may be other well established colonies in outlying districts near the Catskills or Adirondacks.



A Combination Drinking Pan and Grit Box

THERE are a great many kinds of drinking fountains and pans being used by poultry keepers. Some are useful, but not convenient; some are useful in summer, but not in winter, while some are both.

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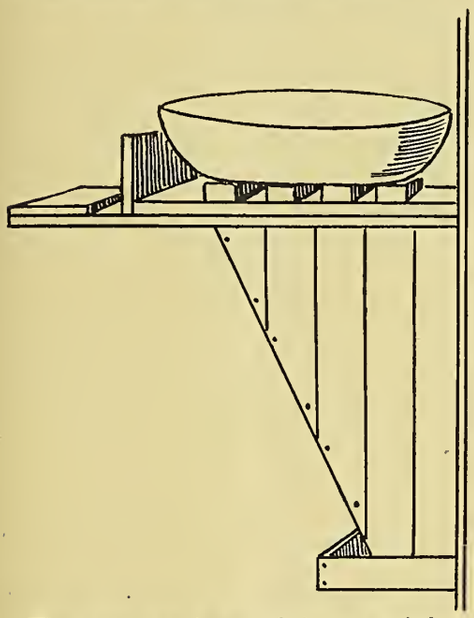
Here is a combination drinking pan and grit box which I have built and used myself and which has proved both practical and convenient. The pan is made of galvanized sheet iron and is three inches deep, three inches longer and three inches wider at the top than at the bottom. This gives it a slope which makes it possible, if you wish to dump the pan when it is frozen, to do so easily with a few raps on the ground. The pan is made of sufficient size so that when kept about half full it will hold enough water for ordinary use; and when it freezes overnight, you can fill it about three-fourths full with boiling water in the morning, which will make the water about right for the flock when they are turned into the scratching pen.

The frame should be hung so that the bottom of the grit box is a convenient height for the fowls. The pan is placed upon the top or table part of the frame and will be above all possible chance of litter being scratched into the water. The fowls soon learn to fly upon the perch and drink the clean, fresh water, whenever they desire.

The grit is always in sight, for it gradually works down as the trough becomes empty. A small screen, either of wire or light wood, can be placed over the trough at an angle to keep the hens from throwing the grit with a sweep of the bill upon the ground, which is so common with them, as they seem to hunt for some particular piece to suit their fancy.

The reservoir of the grit box can be

easily filled at the top, which is open beneath the table which holds the water pan. This table is also covered with a light lid to keep out the dirt from the grit.



The water pan is out of the way of the scratching fowls

The table upon which the pan rests is made so that the side pieces upon which the cross slats are nailed, fit just on the outside of the top of the grit reservoir, making the slats lie flush upon said top. The frames can be easily hung on screw-eyes on each side of the frame placed over two screw hooks. The woodwork can be easily made by anyone handy with a hammer and saw, and odds and ends of lumber serve as material. It costs very little and makes a very serviceable watering device.

A. E. VANDERVORT



Book Reviews

Poultry Foods and Feeding. By Duncan Forbes Laurie. Cassell & Co., Ltd., $1 net.

This book on poultry feeding, which aims to be a practical guide for the average reader, while comprehensive enough to include all important points, ought to prove itself valuable to the beginner in poultry raising, and contains many suggestions that might be adopted by anybody who is interested in this occupation. The author, who is poultry expert and lecturer to the South Australian Government, has written several other books on poultry, but none on the important matter of food selection, which is here consid-



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European and Travel Number—ready June 9th. This Vogue with its fashion postscript from Paris presents everything a traveler needs to make life comfortable in train, steamer and hotel, including some of the newest conveniences in traveling clothes and luggage.

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ered thoroughly. Not only are directions given for feeding so as to win the best immediate results, but feeding for the future is considered and for an ultimate development that will require several generations of poultry to complete. The second part of the book, which is more scientific than the first part and intended for those who intend to go more deeply into the subject, discusses the chemical problems and more technical matters concerning poultry foods.



"What is a Dry-fly?" These are the opening words of Mr. Emlyn M. Gill's book entitled "Practical Dry-fly Fishing" (Charles Scribner's Sons, $1.25), in which the author gives a very thorough answer to the question.

Dry-fly fishing was developed in England for use on slow, clear, placid streams, so that it is not surprising that until recently only a few Americans had used these methods, which in brief are designed to deceive the fish by artificial flies made in such a way that when cast they will float on the surface like the real insect.

Mr. Gill shows that this method can be used with equal success on the more turbulent streams of America. He contrasts the difference between English and American methods, which is largely due to the different characters of the streams. Many instances are quoted in which the dry-fly proved successful where the wet-fly had failed.

The choice of tackle is very thoroughly dealt with; and a chapter is devoted to the artificial fly and the living ephemeridae. An appendix is given showing the equipment for a dry-fly angler.



Royal Gardens. By Cyril Ward, B. A. London: Longmans, Green & Co., $5 net.

We look to England as the origin of our gardening knowledge, and it is interesting historically to know of the old gardens that existed centuries previous to the Declaration of Independence.

"Royal Gardens" is a large work, carefully illustrated in water color by its author, showing what has been accomplished in the royal houses of England. It takes up nine such places, including the Norman Tower Garden at Windsor Castle, Hampton Court, Holyrood Palace and others equally interesting. An historical description is given of each place and of the garden, which is accompanied by illuminating remarks by the head gardener on the gardens in his charge. The colored illustrations are arranged after an interesting scheme, in that the gardens were painted at different seasons of the year, and now are placed so as to show a sequence of English bloom from spring to

fall. The book concludes with a chapter of notes on garden design.

Spices and How To Know Them. By W. M. Gibbs.

This book is devoted to a detailed description of spices and how they grow. The chapter on Adulteration is very thorough, giving illustrations of adulterated and unadulterated spices as seen under the microscope, which should enable the dealer to detect adulteration.

Numerous illustrations and colored plates, together with two maps, accompany the text.

Be Prepared. By A. W. Dimock. Illustrated. New York: Frederick A. Stokes Company.

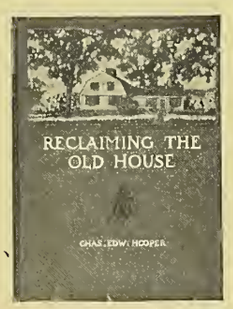
Any book that adds interest to the boy scout movement is a factor for good today, and Mr. Dimock's book is excellent in many other respects also. His boys are unlike the brawny and invincible type that has become so common and wearisome—they are just true boys whose love of adventure leads them through some thrilling experiences in the Florida swamps, of which Mr. Dimock writes so easily. To be sure, they exhibit a remarkable amount of skill and information—they can kindle fires without matches, shoot game with the bow and arrow and find their way through the wilderness by a combination of sagacity and boy scout training, but what would a boy's book be if it did not contain something for the youngsters to live up to? Mr. Dimock has not carried his glorification too far, but has portrayed a couple of human boys with whom it would be a pleasure to go scouting—even in Florida swamps.

HOW TO GROW 100 BUSHELS OF CORN PER ACRE ON WORN SOIL. By William C. Smith. 8 vo. Illustrated. 188 pp. Second edition. Cincinnati: Stewart & Kidd Co. $1.25 net.

The subjects of soils, their weaknesses and their strengths are carefully treated in this excellent little book. Mistaken ideas in regard to fertilization, cultivation and harvesting are exposed and corrected in a manner at once concise and thorough.

It will open the eyes of the average farmer and home gardener to read Mr. Smith's experiences with various soil-covering crops and other methods of increasing the productiveness of the land. While evidently intended primarily for the professional farmer, there is much information in the book which may be adapted to the needs of the owner of a small country place.

BOOKS FOR THE HOME BUILDER



Reclaiming the Old House

By Chas. Edw. Hooper

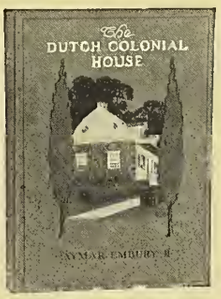
All through this country—especially the New England States—there are scores of rambling old houses which, abandoned by the unknowing, are merely waiting for you to come along and turn them into great cheerful homes; homes that hold something of the atmosphere of other days. Mr. Hooper not only tells you how to find and choose your old house, but how to reclaim it and retain that age-old feeling of cheer and comfort.

His suggestions are supported by an abundance of splendid photographs, plans and diagrams. It is a remarkable book, beautifully made and decorated by Mr. Hooper himself.

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The Dutch Colonial House

By Aymar Embury, II



Mr. Embury has based most of his own well-known designs on the flexible style that was evolved by the old Dutch settlers through New Jersey, Long Island and the upper reaches of the Hudson. He contends that this Dutch Colonial—or gambrel roof—type of house is the most logical solution of the ancient problem of securing, at a minimum cost, an attractive house with a free sweep of air and light and plenty of room.

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Modern Farm Buildings

By Alfred Hopkins

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By Henry H. Saylor. Illustrated, $2.00 net; postage 20 cents.

The Half-timber House

By Allen W. Jackson. Illustrated, $2.00 net; postage, 20 cents.

Concrete and Stucco Houses

By Oswald C. Hering. Illustrated, $2.00 net; postage 20 cents.

Architectural Styles for Country Houses

By Henry H. Saylor. Illustrated, $2.00 net; postage 20 cents.

Distinctive Homes of Moderate Cost

Edited by Henry H. Saylor. Illustrated, $2.00 net; postage 30 cents.

A Book of House Plans

By W. H. Butterfield and H. W. Tuttle. Illustrated, $2.00 net; postage 20 cents.

Inexpensive Homes of Individuality

Introduction by Frank Miles Day. Illustrated, 75 cents net; postage 8 cents.

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The Furniture Designs of Chippendale, Hepplewhite and Sheraton

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By Grace Tabor

The old gardens of Virginia, the prim New England dooryards, the Dutch housewives' gardens of New Amsterdam, Spanish influences in the Southwest—these are among the subjects treated. Besides, the book tells how to make gardens to-day that will be in keeping with the houses that have come down from the past. *Illustrated.* $2.00 *net; postage* 16c.

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The Gardener and the Cook

By Lucy H. Yates

Wishing to keep a constant supply of fresh vegetables upon the table and to grow those that were the most tasty, the author of this book enlisted the co-operation of a clever cook and a capable gardener and gives the reader the fruit of her experience. The book tells what vegetables and fruits are profitable to grow, and tells how to transform them into delicious courses, tempting salads, preserves and jellies. *Illustrated.* $1.25 *net; postage* 15c.

Let's Make a Flower Garden

By Hanna Rion

Here is the most charming book on gardening ever written—a broad statement, but you will agree with it after you have read it. It makes your hands fairly itch for a spade and a packet of seeds. This book is beautifully made, on tinted paper with illustrations from photographs in sepia, and it is decorated by Frank VerBeck. *Illustrated.* $1.35 *net; postage,* 14c.

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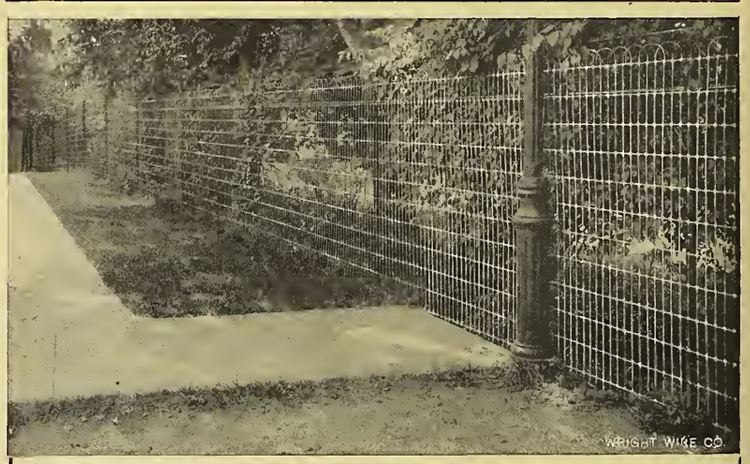
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WILLIAM A. VOLLMER, Managing Editor

VOLUME XXIII NUMBER 6

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Scandinavian architects can give us several valuable suggestions for the summer homes we build in the wooded sections of our country. Ellestuen is built along the lines of the log houses shown in another part of this magazine, but makes use of stucco and board construction. Such a house as this would be very fitting for such country as is to be found upon the Maine coast

House & Garden

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VOLUME XXIII June, 1913 NUMBER 6



A cottage that provides porch shade without an excessive roof overhang. James W. O'Connor, architect

Desirable Considerations for the Summer Home

WHAT FEATURES YOU SHOULD PLAN TO HAVE—CERTAIN PECULIARITIES OF STRUCTURE AND PLANNING THAT GO FOR COOLNESS AND PROVIDE SUMMER COMFORT—THE LOCATION OF THE SITE

BY A. RAYMOND ELLIS

Illustrations by the Author

IN recent years many changes in our needs and tastes have affected the summer home so far as domestic qualities and routine are concerned. We are following more closely some of the English customs and styles, by introducing or taking up the week-end vacation and its consequent guests, with the accompanying outdoor life. This increasing tendency and the motor guests who drop in, in a way complicate the domestic service and create an informal household routine that flavors of a more aristocratic time when the land owners opened their country houses at the end of the season in London.



The porch is the center of country home life and serves the purpose often of dining-room as well as outdoor living-room

The site and location of the summer or country house is most important for the comfort of its inmates. I should look for a site with trees; one big spreading tree with its cooling shade partially protects the roof and walls of your house from the burning sun and cools the ground about the house. It even lowers the temperature of a hot breeze. Two large trees, one on the east and one on the west, will afford ample shade if the house is placed between them to take advantage of the shadows they cast on the site. At the shore you will find scattered clumps of trees, but there it is cooler except when a hot land breeze

blows, and while the trees are ornamental they can be dispensed with at the shore better than inland. Trees can be transplanted at small expense so that shade can be provided almost anywhere. A good water supply must be obtained, either from a driven well or hydraulic pump. Provision must be made for sanitary disposal of the sewerage. Summer life, to be pleasant and agreeable, must afford the comforts of good plumbing, for we cannot forego the conveniences of the city that we have come to look on as a necessity; but they can be supplied on a simpler scale.



Trees are not so essential on the sea coast as inland. An interesting seashore house. Allan W. Jackson, architect



Porch columns supporting the extended roof should be solidly built and have lines of strength rather than beauty. I. H. Green, architect

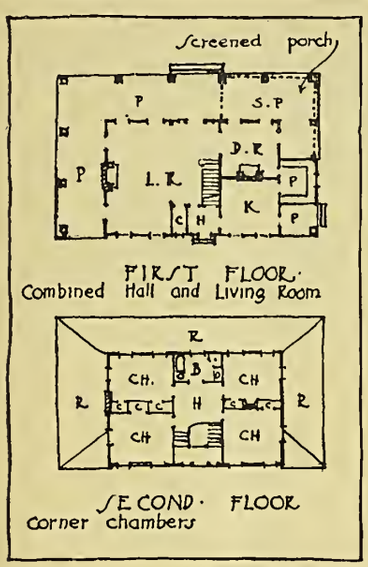
After the site is settled comes the type of construction. The cheapest construction for a cottage or bungalow is a frame covered with boarding and the exterior covered with clapboards over building paper with the inside walls left unfinished. There will be no great difference in cost if the exterior is shingled. However, such a cottage is susceptible to every change in the atmosphere and is but a shell affording shelter from the weather. If near the shore, it is very damp in humid or rainy weather and even the bed linen becomes damp and soggy so quickly that it is decidedly uncomfortable. As for myself, I would rather not go to the shore if I had to try to sleep in damp sheets and many other people find it as disagreeable. Stucco does not stand well on frame cottages at the shore owing to the excessive moisture. To keep the cottage dry and minimize the dampness the best waterproof building paper should be used on the outside walls and under floors, but this will not prevent either heat or dampness penetrating. The interior walls may be sheathed or plastered as additional protection and to make a more attractive interior, but I think a cellar with a small heater is the only real preventive. The cellar avoids the accumulation of dampness under the house, and a wood fire built for an hour or two in the heater, will dry the whole house out on a damp day. Many attractive and convenient summer residences fail to be comfortable on this account in sections that are not favored with a dry climate. Our New England coast is not so favored and my advice is to build a cottage



An excellent example of a well shaded country house where additional chamber and porch space is obtained by the extended roof

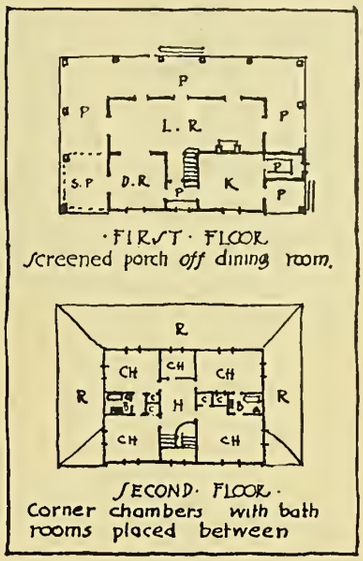


Lattice and vines supplement the structural lines of the porch and serve the same purposes as awnings if properly arranged





A single tree shades this house. Cross ventilation is provided for in left plan; in the right, is a fine living-room for seashore—three exposed sides shaded by the porch

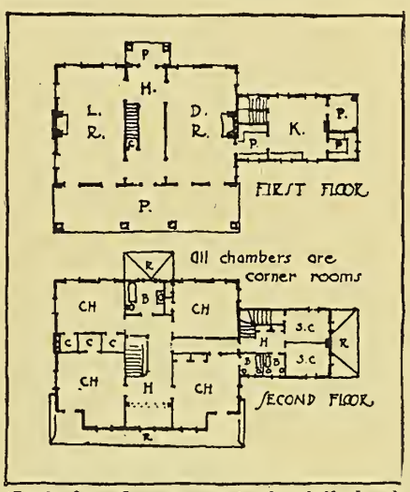


with a small cellar, large enough to contain a small heater or furnace, supplemented with two fireplaces and a good kitchen range. Then the house can be kept dry during a cold, rainy spell or made comfortable at the end of the season when the late autumn rains or early frosts make it decidedly chilly.

One of the things you must see to is that the exterior walls and all floors are insulated with a heavy waterproof building paper before shingling, clapboarding or stuccoing, and the interior walls should be sheathed or plastered, for it will make it both cooler and dryer. Composition wall board may be used instead of plastering and if put up according to the manufacturers' instructions, good results can be obtained because it saves time and the litter and muss of plastering.

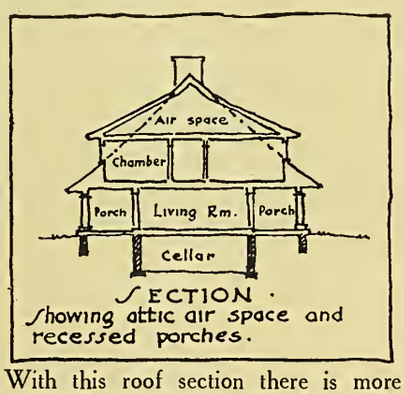
To avoid hot, stuffy chambers, you must have large windows and ceilings at least 8′ 6″ high. The chambers will be cooler if the roof has pitch enough to permit of a large air space or unfinished open attic with a window at each end. This allows air to circulate and become cooler as night falls. Tin roofs should be avoided near windows, for flat roofs draw and reflect heat and are very noisy in heavy rains. I have used canvas where I had to have a flat roof and wished to avoid the heat and noise. Balcony floors should always be covered with canvas.

The plan of the country house or cottage in general should be as open as possible to permit a free circulation of air and a good outlook through low, wide windows and French doors. To realize fully the essentials of the plan, we must stop and consider the present mode of summer life and its attendant requirements. Probably your first mental picture, at the mention of a summer or country house contains a wide piazza, prettily furnished with willow or wicker furniture and animated by a number of well-tanned, healthy young people. Porch life is a distinct feature of the summer home, consequently rooms that have a well-known function in the city house are unnecessary in the summer house. We must, however, keep the large living-room, but it may combine with it the hall, and we must have a dining-room and above all a compact kitchen and pantry. No one will be happy or healthy if there is any failure or lack of efficiency at that end. Life centers on the porch and if it be wide and cooled by the prevailing breezes it will be thoroughly enjoyed. The dining-room should open onto the piazza, because a porch breakfast, luncheon or tea is both delightful and a common occurrence, and the service must be convenient. But we must screen it from flies and mosquitoes. Neat, screened frames, with large openings between the porch piers or columns are hardly noticeable; but they add considerably to the comfort, and in some places no comfort can be obtained without them.



Each first floor room is the full depth of the house—a cool arrangement

The living-room and dining-room should open into each other by a wide, cased opening. The living-room should occupy half the ground floor, with large wide windows on three sides, and French doors opening onto the piazza, which should extend across the front and perhaps one end. The location of the rooms will depend on the compass points and the prevailing winds and the best view. The kitchen must be located so that the prevailing breeze will make a cross draft through it and take the odors away from the house. The summer kitchen can stand a northern exposure. A large kitchen porch should be built partially screened with lattice work, for here the ironing, peeling, shelling and other such operations can be done comfortably. The rooms will be cooler if arranged so that they extend the full depth of the house, thus obtaining a cross draft. Hot and stuffy passages can be dispensed with, with a little study and ingenuity.



With this roof section there is more second floor space and a picturesque exterior

The planning of your piazza is important. Shall it be an extension of the main roof, thus obtaining additional chamber space and added coolness to the first floor rooms? In some of the photographs you will see that this is a favorite method used in country house designing, and it produces a picturesque rambling type that is always interesting and economical. It does make cooler and larger rooms, it gives a good air space over the cham-

(*Continued on page* 521)



THE HUNDRED PER CENT GARDEN



THE FOURTH TWENTY PER CENT.—CARE OF THE FULLY DEVELOPED GARDEN—CULTIVATION AND THE IMPORTANCE OF THE DUST MULCH—FIGHTING THE INSECT PESTS

BY F. F. ROCKWELL

Note: Heretofore the home garden has been looked on by many people as more or less of a hobby deserving only as much attention as one usually gives to the pursuit of recreation. That it deserves to be taken up seriously, studied in all its details and developed to the limit of its efficiency is a new presentation of the subject. How to have the very best garden possible on a business basis is the theme of the present articles, although they are also planned to aid those who can give but limited time to the garden's cultivation. They take up carefully and practically one detail after another in natural succession to the completion of the hundred per cent. garden. The first four articles dealt with the sowing of seeds indoors, solving the plant food problem, and the planting of early and later vegetables, appearing in the February, March, April and May issues. This is the fifth of the series. EDITOR.

IN many ways the planting of the garden is the most intensely interesting part of the season's operations. It is another illustration of the ancient assertion that anticipation is more of an incentive than realization. In any event there are every year many hundreds of gardeners who start in with a very full and fixed determination to make their gardens as perfect as possible, who, when here and there something begins to go wrong—when the cut-worms get a few of the best tomato plants, and some seed sown too early or in improperly prepared soil fails to come up—get very much discouraged and consequently do not care for things to the best of their ability. Thus they fail to get the best results which they might from the start which has been made, and which it is now too late to make over again until another year.



The garden that is well cared for during the summer should show a soil well cultivated and free from weeds

The real reasons for the importance of weeds are frequently not understood. The average gardener has an idea that he uses weeders and wheel-hoe simply to fight the green and ever persistent ranks of his arch enemies, weeds. As a matter of fact it is by no means infrequently the case that weeds are among the best friends he has. If they were not present to spur him to action his crops would never receive the frequent cultivations and stirrings of the soil which are essential to their successful growth. The killing of weeds is in fact the least of the three main advantages of cultivation. Before it in actual importance, if not the mind of the amateur gardener, comes the maintenance of proper moisture and fertility.

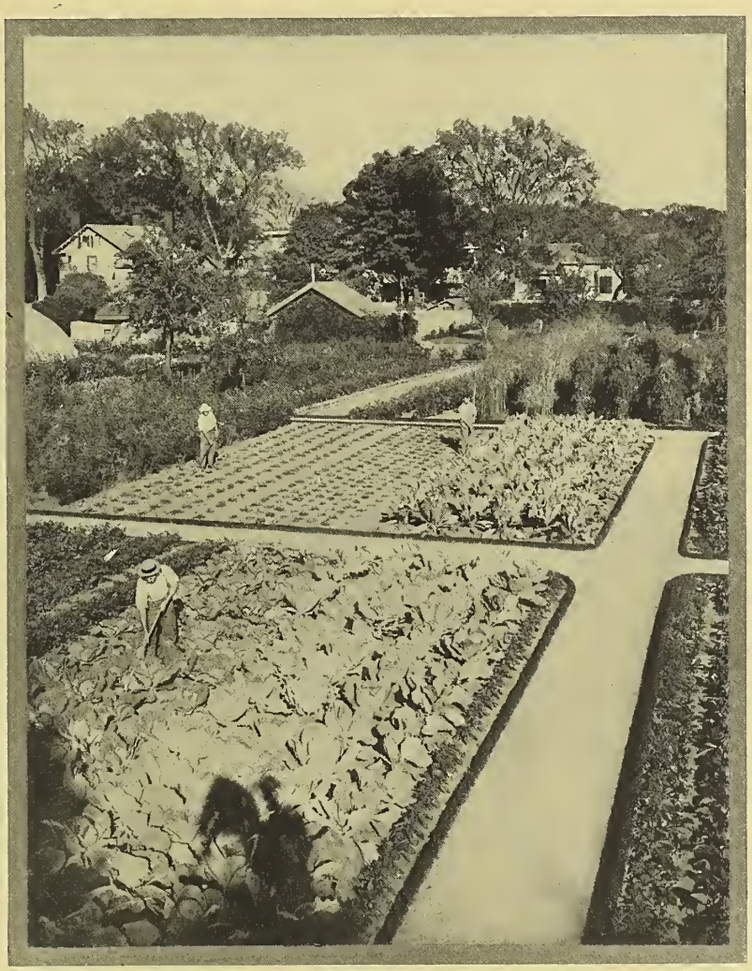
You may not see at first glance how cultivation will help you grow hundred per cent. crops by helping to supply that vital necessity, *soil moisture*. As a matter of fact it does not help to *supply* it, but it does save it and distribute it evenly throughout the season. Plenty of moisture in the soil, as I have said before, but am in no danger of over-emphasizing, is essential to the growth of perfect crops; in fact, many soils which are known as being very rich, owe their reputation largely to the fact that they are of such a character that moisture is retained by them readily. Now it is very seldom indeed, in fact practically never, that the season's rainfall, upon which your crops depend very directly for the growth they are to make, is evenly distributed throughout the season. Indeed, during the last several years there has seemed to be a marked tendency toward our having a regular "dry season" or prolonged drought. Therefore it becomes increasingly necessary to save part of the moisture from the season of superabundance for the period of famine. It is, of course, not practical for us all to have reservoirs for this purpose, and therefore we have to devise some method of saving the water where it falls. You have noticed at some time or other how moist the ground or the grass remains under an old box or board or even under a piece of paper or a pile of weeds. It doesn't seem to make much difference what the material is as long as the soil is shaded and mulched. In fact, so

little difference does it make what material is employed that the upper surface of the soil, if soaked, itself can be utilized for this purpose, thus making a soil or dust mulch about which you have heard much said during the last few years. The effect of this soil mulch on the surface is to keep the ground below it shaded, cool and moist. To accomplish this result the upper surface for a couple of inches or so in depth has to be kept hot, dry and dusty; this to be maintained in such condition must be disturbed or "cultivated" frequently, because as soon as a crust forms, as it will do within a few hours after a rain, especially in hot, bright weather, its benefits are lost and the moisture begins to escape at once by what is known as "capillary attraction" from the lower levels of the soil up through the surface and into the atmosphere. This "leakage" goes on over every square inch of your garden, no matter how large it may be, and the resulting loss is very serious; the only way of preventing it is frequent cultivation.

Another great benefit of thorough cultivation, which is not usually credited to it, is the fact that the finer the particles into which the soil is broken up, the more rapidly will the various forms of plant food locked up within it become dissolved and changed into forms which are "available" for feeding the rootlets of the plant; for, as we have already seen in the discussion of plant food (manures and fertilizers), it is not merely the kinds and the amount of plant food contained in the soil but the forms in which they exist, which determine the kind of a living the plant will get there, just, for instance, as you might fare very poorly if locked up in a meat market with a lot of raw meat, raw vegetables and canned goods.

Then, too, as we have also already seen, the various plant foods have to be in the form of solutions before the tiny roots can absorb them; therefore the more the soil is kept broken up the more readily can the moisture penetrate to every part of it and put into a condition for the plant's use any foodstuffs which may be in the soil.

Nowadays, when a half hour snatched before train time in the morning or toward evening after the day's work, is frequently all the time there is available for tending the home garden, it is absolutely necessary to use all one's energy and time in the most efficient way possible. The only way to do this is to have an adequate supply of modern garden tools and to keep them in excellent working order; of these the wheel-hoe with a seed drill attachment is the most important. I have already mentioned the desirability of having one of these machines for doing the sowing and planting of all sorts of seed. With them the work of cultivation is done so much more quickly, easily and neatly that anyone attempting to get along without one might reasonably refuse to make use of modern rapid transit in getting to his work in the morning. The wheel-hoe is a very simple machine, indeed, and yet it will do good work only when properly taken care of, which means that it should always be kept under cover when not in use and always be thoroughly cleaned after using; for if it is put away in a dirty or wet condition it will soon become so rusted as to become seriously impaired in its efficiency. But keeping the wheel-hoe clean and in good working order is by no means all that is required. You will find that quite a good deal of experimenting is necessary before you can adjust it to do the various jobs required of it in the best possible way; also there are several extra attachments which every gardener should get, the most important of which I consider the "disc attachment," which consists of two gangs of three small discs each, which may be adjusted as to distance apart and angle, and the "cultivating attachment," which consists of two gangs of three teeth each so arranged that the teeth next to the rows do not cut into the ground so deeply as those in the middle. The disc attachment should be used for the first two cultivations, as they throw absolutely no earth toward the rows; in fact, it can be so adjusted as to shave close up on either side of it and leave the center absolutely undisturbed, so that it may be used before the seeds have got above ground at all. We go over all our onions, beets, turnips, radishes, etc., in this way a few days before the seedlings will get above ground and again before they are big enough for the first hand weeding, thus reducing this time-killing work to the very minimum. Even in a very small garden the amount of time saved in a single season will easily repay the small extra expense of this attachment. For the third cultivation, which should follow immediately after the hand weeding, use the regular cultivator teeth, or better still, the special attachment referred to above, as with this you can work the soil more deeply without any injury to the little seedling plants in the rows. For later cultivations use the flat hoes, which should always be kept sharp and bright, first with the "heel" kept toward the row to prevent any earth being thrown over the small plants, and later reversed with the point toward the row, as they are less apt to be caught in any straying foliage that may be in the way.



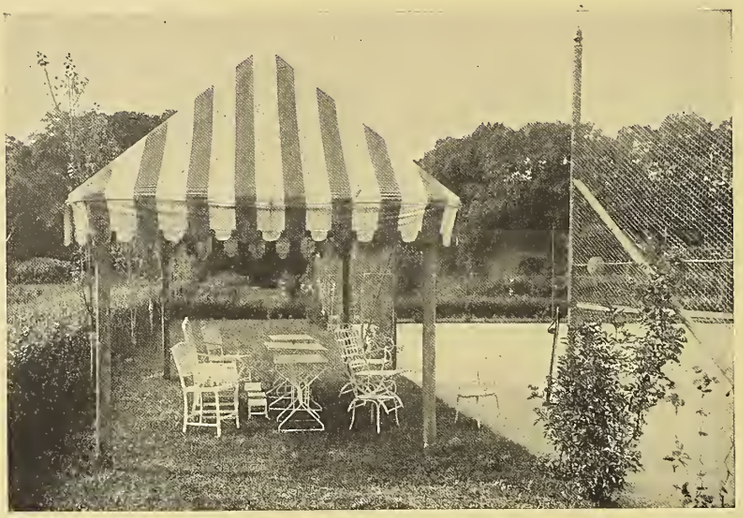
Use the wheel-hoe wherever possible, but in between the plants where it cannot be employed the hoe may be substituted

For crops that remain in the ground for a long time, such as onions, parsnip, oyster plant, carrots for winter, and so forth, which will require a number of cultivations during the summer, it is well to use the cultivator teeth every third or fourth time, as the soil between the rows becomes packed down quite hard from being gone over so frequently.

(*Continued on page* 509)



For a formal garden or porch terrace the white wood chair is suitable



The tennis court needs some artificial shade. Such a shelter as this or the similar umbrellas is desirable. The furniture here is metal



Along the garden walk such an arbor seat, rose covered, is an attraction

SUMMER FURNITURE FOR COUNTRY HOMES

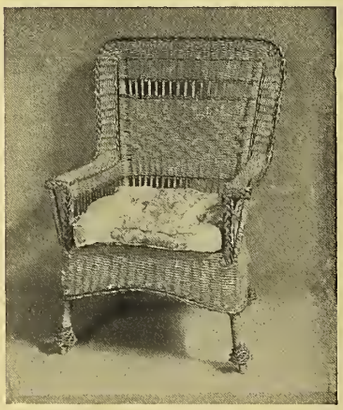


A well designed willow chair stained to match furnishings

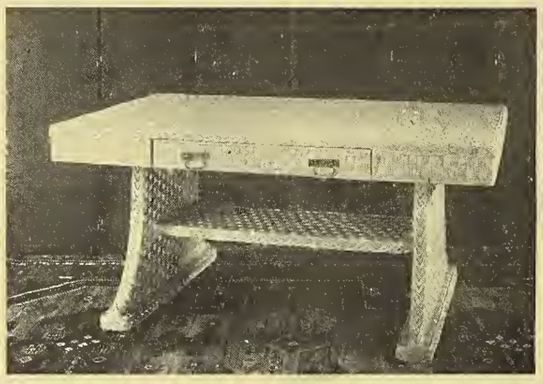




The chair at the left has a flexible back; the other, a spring cushion



Prairie grass furniture may be had in numerous shapes



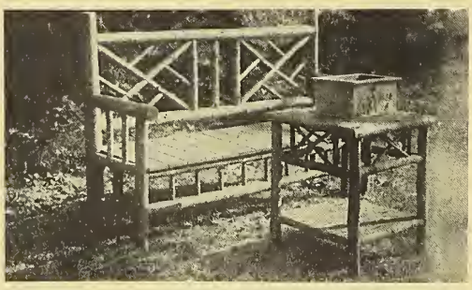
Where the porch is a living-room, such a table as this is almost an essential



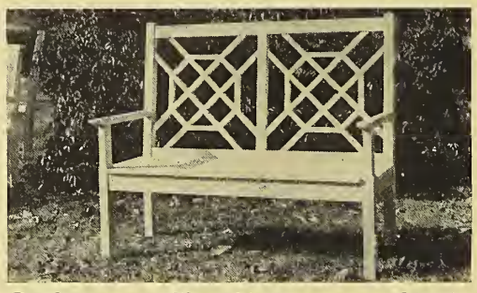
Plant boxes may now be had of willow and wicker



The reclining chair, built on steamer lines, lends comfort to the summer porch



Rustic garden furniture should be simple and avoid curves and bends as much as possible



Garden seats like this were popular in Georgian days, and are still appropriate



Another example of well-made rustic furniture. It looks, and is, strong and durable

Attracting the Wild Birds

PRACTICAL METHODS OF INDUCING A LIKING FOR YOUR GROUNDS AMONG THE BIRDS —FEEDING HOUSES AND NEST BOXES THAT HAVE PROVED THEIR WORTH IN ACTUAL USE

BY E. I. FARRINGTON

ALONG with the increasing interest which is being taken by suburban dwellers in the rational improvement of their grounds, there often comes a keener awakening to the meaning of the wild life which exists even in quite thickly settled communities. We are constantly learning more of the habits and life stories of the birds, smaller animals and insects, and the parts they play in the general scheme of things, but perhaps the most delightful feature of this phase of country activities is supplied by the actual presence of the small creatures themselves. especially the song birds.



The feeding house is covered so as to protect its contents from storms, and is mounted on a post

and yet are made easily accessible. Various small grains, with bits of suet and bread crumbs, are the delicacies which are used to tempt the birds, and hardly has the first snow whitened the bushes before the Chickadees and Juncos begin to appear, with the Nuthatches, charming, white-bellied little creatures, not far behind. Much of the food which tender-hearted people throw to the birds is wasted and much of the pleasure to be found in watching them feast is lost because suitable feeding arrangements are not provided. This simple bird table can hardly be improved upon and is almost certain to be made use of



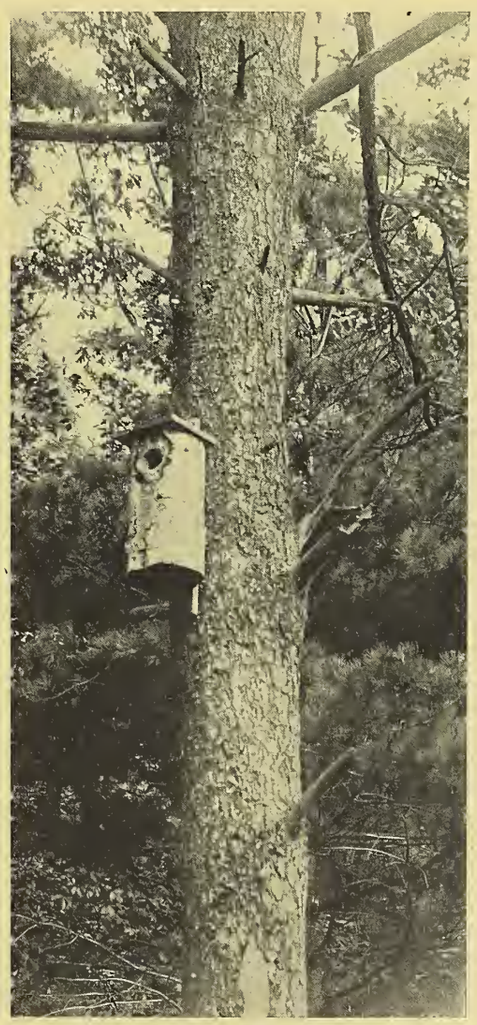
A dead tree is a favorite resort of woodpeckers, and so is a good place for a nesting box

There are various ways of attracting birds to your place, such as erecting feeding boxes for winter use, planting such trees and shrubs as will provide shelter from severe storms, placing artificial nesting sites for certain species, and so on. Any one of these methods should be more or less successful, yet naturally the most gratifying results are to be obtained from a combination of all, as has been done by Mr. Kennard at at Newton Centre.

Mr. Kennard has placed a feeding house just outside his library window, surmounting a rustic cedar post imbedded in three feet of concrete to make it firm. As the illustration shows, this feeding house is so covered that its contents are protected from the storms if properly located. The birds are not slow to accept the hospitality if it is offered in the right way. Every means is used to coax the birds into the woods. The trees have been thinned to let in the light so that the underbrush will grow, and high bush blueberries, shad bushes, dogwoods, privets, barberries, bayberries and the sweet fern are found in profusion, with partridge berries and various low-growing vines making a soft carpet under foot. The taller underbrush has been encouraged, in particular, in order to create the conditions most favorable to bird life.

Turning to the subject of nesting boxes, one of the best types is that known as the Berlepsch box, from

(*Continued on page 492*)



The box should be in a perpendicular position, like the woodpeckers' natural nesting site



If the bungalow site is wisely chosen on a hill, it has the advantages of good drainage, a superior view and better ventilation

A Woods Bungalow With City Conveniences

BY JEAN OLIVER



The living-room is large in proportion to the general plan, and opens on a hall that runs the length of the bungalow



The original slope of the land was kept, thus avoiding the expense of cutting and filling, besides preserving a more attractive appearance

THE convenience and economy of a city apartment, combined with the freedom and simplicity that is possible only in the woods, represented our idea of what life ought to be in the summer. When we came into possession of a plot of ground on a wooded hillside, we lost no time in drawing plans for a bungalow in which to put our theories into practice.

The problem before us was to attain the greatest amount of practical comfort and convenience for the least expense, and at the same time to make the place attractive. To our way of thinking the result has covered these points.

Our floor plan measures 28′ x 37′, including a living-room 14′ x 15′ 6″, with an open fireplace, a reception hall 8′ x 9′, a dining-room of irregular shape, but equaling a ten-foot square, a bedroom 10′ x 14′, a bathroom 6′ x 7′, a kitchen 8′ x 13′, a central hall 7′ x 9′, a 5′ x 9′ closed porch with refrigerator closet, and a generous supply of closets in four of the rooms. About one-third of the space under the house is walled off for a cellar and this is the only expense for masonry in the foundation. The remaining outer walls, resting on "piers," are all shingled to the ground, and the space within used for the storage of firewood and other things not wanted in the cellar proper. An attic covers the entire house, whereby much heat is kept from the rooms below in hot weather.

The builders' estimate for this bungalow was a trifle over $2,200, divided as follows:

Mason work, plastering, etc., $540; plumbing, $275; lumber and woodwork, $730; painting, complete, $145; labor, $525.

Although the quest for simplicity led us to plan some things that were primitive, we felt that we could not afford crudeness in matters so important as plumbing and kitchen range; health and comfort depending upon these things being convenient and up-to-date. Also we allowed ourselves the luxury of a living-room with six windows, that was large in proportion to the general plan, and we indulged in a roomy bedroom closet, five by six feet, with a window, and large enough to contain a good

(*Continued on page* 495)



The low, rather flat roof with well overhanging eaves gives a low, horizontal effect that makes the bungalow seem smaller than it really is

An Attractive Western Bungalow of Low Cost

BY MARGARET BEAN

BEING motor boat enthusiasts, the kind without experience, we decided that we must have a motor boat. Some retain this enthusiasm after sufficient hardships to have discovered the North Pole; others ruin their dispositions and engines and then quit forever in utter disgust. At first we did not sail overspeedily, principally because when we went, we went under human horsepower. Most of our admiration, as yet, was spent on the boat as a study in still life. We got disgusted, but not discouraged. Sunday excursions did not seem to give us sufficient acquaintance with the boat, so after a consultation, we decided that we had better live by the boat. Accordingly we picked out a place on the endless shores of Puget Sound, anchored our boat and built a cottage.

The cottage was built in a short time in spite of the fact that sunshine deserted and the heavens sent down rain in a deluge. In ten days' time with a good crew of men we completed the house, such as it was, at the entire cost of $635.

It is built of rough lumber with battened sides and has a rather flat roof with a two-foot cornice. The chimney at the left of the porch is built of common red brick laid on a heavy base of different sized cobblestones picked up on the beach.

The pergola porch gives individuality to the house. Its roof is made of alder logs laid cross-wise from the side of the house to a large log supported by two upright posts of the same material. This may seem impractical, but the porch is sheltered from any sun by a network of overhanging branches from the trees growing close to the cottage, and the rains are too few to cause any inconvenience.

At one end the ground slopes away, making steps necessary in the approach to the porch. Consequently the floor is of good bench height and with the addition of pillows makes a comfortable place for grown-ups to lounge and youngsters to dangle their legs. The three long, low steps are made of alder logs notched and fitted into one another, forming a sort of box which is filled with a mixture of cement and small cobblestones. They are

(*Continued on page* 493)



The porch is of good size and its attractive outlook adds to its best function—that of being an outdoor living-room



The pergola porch is in keeping with the rest of the house and has the advantage of being easily constructed



The cabin of Count Eric von Rosen shows the fitness of the log house for woodland site

The Revival of the Log Cabin

THE CAREFUL ARCHITECTURAL TREATMENT OF THE LOG CABIN IN THE SCANDINAVIAN COUNTRIES OFFERS VALUABLE SUGGESTIONS FOR COUNTRY HOUSES HERE IN CERTAIN PARTS OF AMERICA—SOME HINTS WORTH TAKING AS TO STRUCTURE AND DESIGN

BY GEORG BROCHNER

EDITOR'S NOTE:—*The increasing interest in Denmark, Norway and Sweden to develop the ancient type of log cabin has led to the production of modern structures particularly fitted to forest districts. The traditions of previous building have been strongly adhered to and only such modifications as modern requirements demand have been made. While woodland homes, hunting lodges and camps of various sorts have been designed by American architects in a variety of styles, is there not a pertinent suggestion for America, not only in adherence to elemental types in building, but also in construction of the type of house appropriate to the site? It is not suggested that the ideas contained here be followed to the letter, but is there not much that may be adopted to advantage as a substitute for the summer home so often built in formal design upon a natural setting? A concluding article will deal with the methods of building and finishing log cabins.*

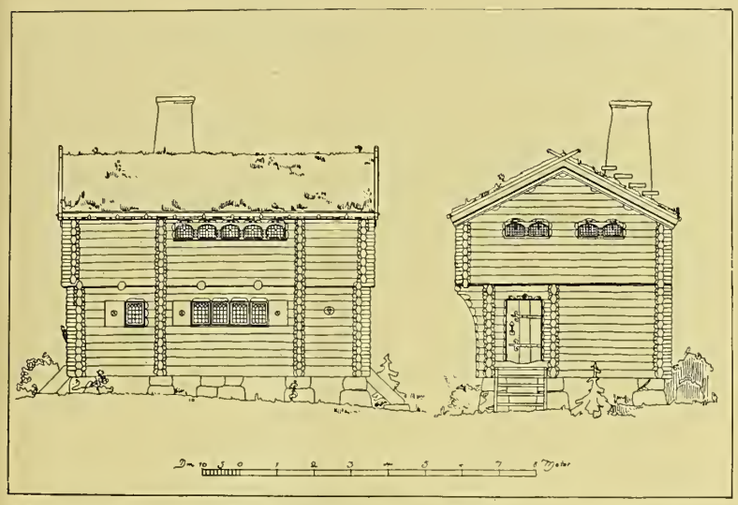
ALTHOUGH the title of this article may appear a little far-fetched, it will, I think, be found fully justified by the contents of the following pages, only the log cabin must be taken in a somewhat wider sense than is generally the case in America. Still I claim no more for this name than is its ancient due and which I think present-day architects of distinction show an evergrowing willingness to grant. This is not only in theory, but also, which is more to the point, in practice, for houses of diverse purposes on the venerable principle of the old log cabin or timber house of many centuries ago, are being built, only—the log cabin being subject to all things governing laws of evolution, is being conformed to the varied and increased wants of our time.

Nor can anyone wonder at the log cabin again becoming popular. Timber is an excellent, and in vast territories the cheapest and most natural building material. I know of old timber houses which are centenarians four or five or six times over and which yet show no signs of old age; timber houses are warm in winter and cool in summer; and last, though not by a long way least, they can possess an individual picturesque charm entirely their own. Added to these advantages the log cabin (in the wider sense of the word) when its interior is completed and equipped with some regard to past tradition and in harmony with the esthetic requirements of the material, possesses a trusty, old-time homeliness, which I will defy any other style of house to outrival. And what home can almost instinctively bring its inmates in closer and more spontaneous contact with the natural and, so to speak, inspire a life with nature, than a timbered house?

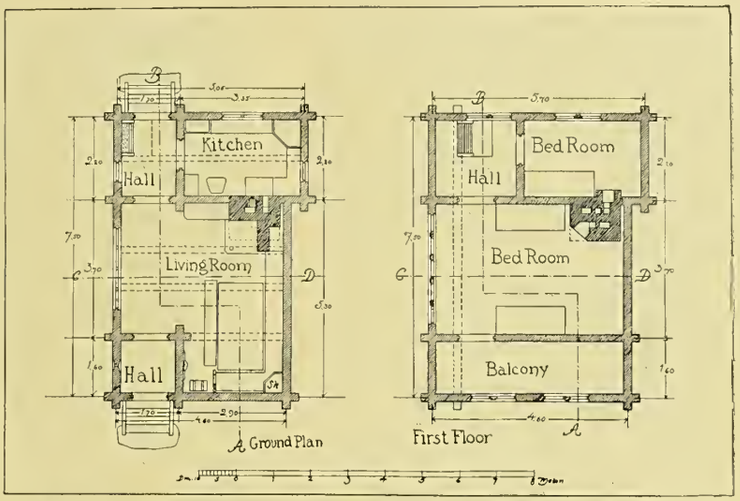


The doorways are decorated with iron work allegorical of the Count's hunting expeditions. Details of these doors are shown above

History, also in the matter of the log cabin, has repeated itself and in a most literal manner. In days long gone by (I am here speaking of the Scandinavian countries) the King and the peasant both lived in log cabins. They were different more in dimensions and equipment than in plan and style. Each had a large and a small room and an open corridor or veranda—both words sound horribly out of place—the *svalegang*, constituting the accepted plan of the oldest preserved



The elevations show the proportions of roof structure. If the slope is too steep, turf may not be used



A large living-room is the main feature of the ground plan. The *svalegang* is called balcony in this plan

type. There was, at first, an open hearth or fireplace in the center of the big room or hall, the smoke escaping through a hole in the ridge of the roof, and later on a regular fireplace, a *pejs* (now again often used) with its own chimney. The long fixed benches along the walls by degrees gave way to movable furniture and the invasion of advancing civilization made itself felt in several directions. The house became two storied, though only in a portion at first, which necessitated the introduction of a ceiling, a hitherto unknown structural feature in the log cabin, but the roof, at the ridge of which the beams met at a somewhat



There is no excavated foundation to the log cabins of Sweden, but the house rests upon the ground and a foundation of heavy stones. The leaded windows with solid shutters are characteristic. Nearly all the partitioning is structural, as may be seen from the log ends projecting at either side of the row of windows



Fireplaces are located in corners, an iron support serving the purpose of a crane



The architect has provided for furniture that is produced by local craftsmen. The elaboration in detail would be very expensive here, but a simplified type could easily serve as a substitute

wide angle, was still covered with turf, as is now again often used.

In spite of the simplicity of these early timbered houses, of, say, five hundred years ago, they were endowed with a bearing and harmony in proportion which is bound to call forth admiration even in our blasé and fastidious age; and the workmanship, from a mere technical as also from a more decorative point of view, may still, and does, serve as a pattern for modern log cabin builders.

To show how history repeats itself in this conection also, suffice it to say that the King and Queen of Norway's new forest home (a gift from the nation) is a log cabin. It is on a large scale, certainly, but the constructive principles are the same. Log cabins, humble as well as elaborate, are being built by the man of slender means and by the wealthy nobleman, for summer or winter homes, or all year residences, for week-end outings or temporary quarters for big game shooting.

It is more especially in Denmark, Norway and Sweden that what may be called the modern, or in any case the modernized log cabin, is to be seen to its greatest advantage, and I think I may claim for the houses selected to demonstrate this, that they are among the best, if not the best, which have so far been erected. They are also the work of distinguished architects who with true artistic interest have embraced the task entrusted to them and who on the whole may be said to have luckily grasped the spirit of bygone days.



A corner of the living-room serves as a dining-room. The bench along the wall is a traditional feature that is a survival from the earliest buildings. The interior trim is left in a natural state

A log cabin possessed of unusual interest is the one designed by the Swedish architect, Ivar Tengbom, for Count Eric von Rosen, a member of one of Sweden's leading noble families and, though still a young man, a famous explorer and big game hunter who has visited most parts of the world, his last expedition being to unknown regions of Central Africa. The cabin, exterior, equipment and plans of which the illustrations demonstrate the more important points, boasts a picturesque location at one of Södermanland's charming lakes, in a country rich in game. Under the supervision of the architect the cabin was



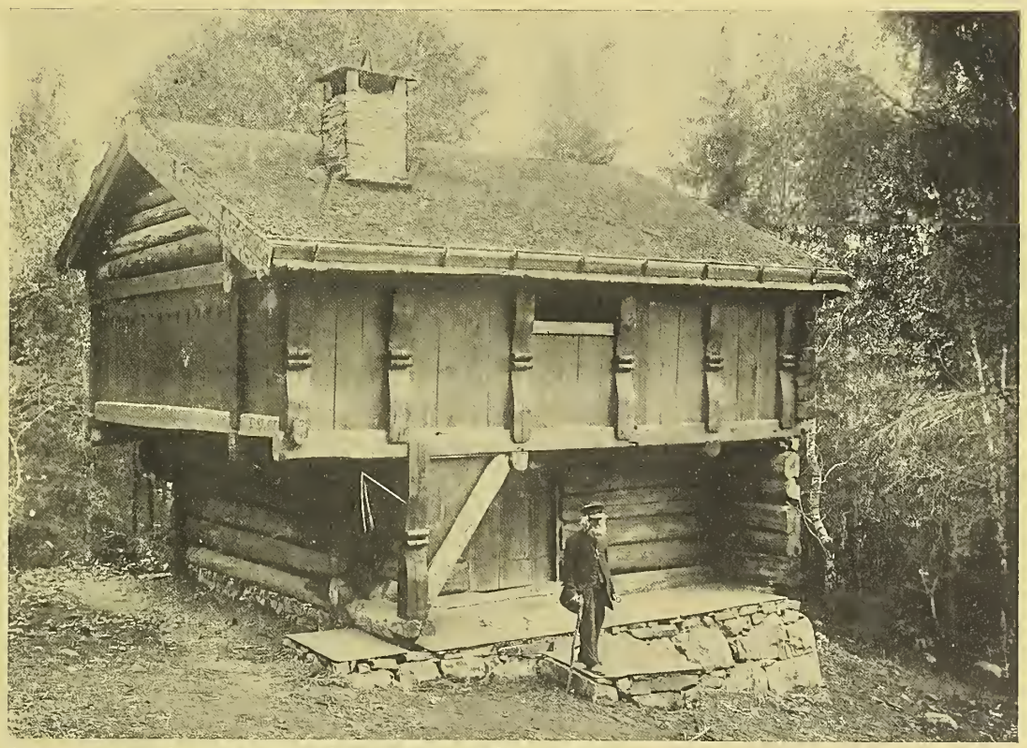
The roof is covered with turf or sods which by a judicious use of building paper is weather-proof and lasting. The grass and blossoms grow to give a very beautiful effect



The entrance to Ellestuen shows carved detail that is exceedingly attractive

built of rough timber by two native workmen, in whose delightful homeland the timbered house still reigns supreme, and the work gave no trouble whatever. The cabin has the small windows, set in lead, peculiar to its early prototype, and the interior with its decoration in carved wood and wrought iron consummates the scheme in the happiest manner. The wrought ironwork on the doors illustrates in the quaint and primitive style of past ages, and in effect approaching many an ancient Gothic gate, some of Count von Rosen's hunting and exploring adventures—one a rhinoceros hunt in Africa, another an episode from an exploration in South America, the Count with his followers swimming towards an unknown shore, their weapons between their teeth and their baggage on their backs, the natives on the bank awaiting the advent of the strange visitors. The open fireplace is peculiar to these northern cabins and when the huge birch logs are well ablaze and their flickering, fitful flames lighten up this singular abode, then is the time to relate a weird old *saga* or some passing strange hunting experience.

The Ellestuen, designed by Mr. Carl Brummer, lies some distance north of Elsinore, high above the sound, with an enchanting view of the Danish and Swedish coast, the blue Kullen mountain in the distance. Its great breadth, its turf roof and the large hall or living-room recall the early Norwegian log cabins, but in Ellestuen the staircase with its gallery is inside the hall, and there are other rooms both on the ground and the first floor, including some quaintly charming bedrooms. The doors and other woodwork in the big hall, which has no ceiling, are ornamented with carving after old time motifs painted in bright colors, and Ellestuen is a very delightful and very individual house, which well deserves the European fame it enjoys, roomy and at the same time stylish and homelike. Ellestuen has cost some $13,000. Although of log house design, it has departed from it in construction. The house is built of stucco below the first floor and battened boards above. Where large and uniform logs are not procurable locally this is apt to be much more economical.



A very ancient log cabin that shows the possibilities of timber decoration. Here boards are substituted for the logs in the second story. The roof shows the means of keeping the sods in place

Roses and Their Garden Culture

SELECTION, PLANTING AND CARE TO GET THE BEST RESULTS FROM YOUR ROSE GARDEN—LAYING OUT AND PREPARING THE BED—SOME OF THE BEST VARIETIES

BY GRACE TABOR

Photographs by M. H. Northend, Chas. Jones and Nathan R. Graves

ROSES are without doubt the most aristocratic, exclusive, and in some ways exacting flowers that the garden knows, and it is necessary to love them very dearly and to know them rather intimately, in the way that only real affection will help you to know them, to grow them as they should be grown and in the way that gives best results. Primarily the rose is grown for roses, and not for any value which the plants have in making a garden picture. Its place, therefore, is quite apart from the picturesque part of the garden, and it should never be thought of nor planted as a shrub. Neither should it be mixed in with the growth of a herbaceous border. For here too, it will disappoint, in that it has practically no beauty of the kind required in such planting. Until you have come to a full realization of this, and to a feeling towards it which makes you quite willing to give it the space which it requires and the setting which alone will bring out its best points and all the wonderful beauty of its flowers, my earnest advice would be, do not have any roses at all.

This setting apart of a rose garden does not by any means require large grounds or much space. A single rose bed, holding only a dozen plants, may be treated in such a way that it becomes a rose garden quite as truly as the acre set apart for them on a great estate. Do them the justice, however, of giving even such a bed those little touches that distinguish it. That is, let it be surrounded with a walk of turf, preferably, and outside of this, making a boundary, plant something which may answer for a hedge. Many things will serve this purpose. My own choice for the small space is lavender, rosemary or mint. Of these the latter is perhaps the easiest to secure and the most certain to survive, although both the others may be carried through the winter with suitable protection. Such an herb hedge may be trimmed very much as a hedge of privet or any of the more substantial growths—or it may be left to grow in its natural fashion. Boundary plantings of the shrub roses are delightful, but these are suited only to a fairly large space, and, of course, the familiar woody hedges of all kinds are excellent. Indeed, almost any form of definite boundary treatment may be used, the one essential being to set the rose garden apart and make it a distinctive feature. The necessity for this treatment lies in the exacting demands of the rose plant, and the fact that these demands have developed an altogether different standard of beauty to rule rose planting.

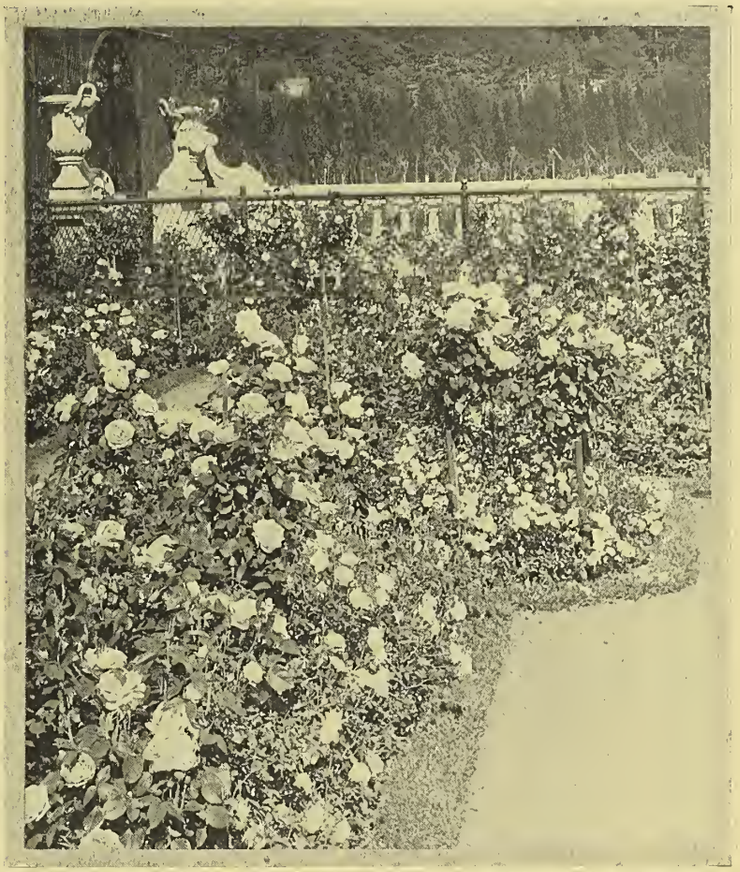


Rose arbors are often possible in place of a regular rose garden. This one shows Lady Gay

So much for generalities. Assuming that you are ready to make a rose garden, and anxious to plant the roses, the first thing to be done is to select the site for the former. It must be in full sun, somewhat sheltered from the coldest and rawest of winter winds, and well drained. There should be no trees nor shrubs within fifteen feet of the beds—and the beds themselves must be absolutely clean kept, with no growth of any sort whatsoever at the feet of the plants. This means, of course, that the earth is going to show; and this is one of the features of a rose garden that is quite impossible to



Ground devoted to roses should be for them primarily, as these plants deserve undivided attention being paid to their best points



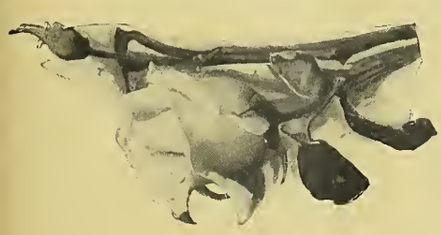
Let the rose beds be surrounded by walks, if possible, so that they may be distinctively marked out and given added attractiveness

reconcile with ordinary standards of beauty, for everywhere else the aim is to clothe the earth completely with vegetation. If it were not for grass paths I do not think that such an exposé of the ground itself could be tolerated, even for the sake of a rose. But the grass paths neutralize the glare and the nakedness of the ground so completely that a rose garden well designed, well made, and carefully kept becomes really a wonderful mosaic in brown and green with the blossoms studding the former.

Beds should never be wider than forty-two to forty-eight inches. They may, of course, be as long as the situation demands. This width, however, is as great as clean culture and proper care of the plants will permit—for it should be understood that the gardener must never step on the surface of the bed, but work always from the walks, reaching over. Beds this width will accommodate two rows of plants placed zigzag as the diagram in the continuation of this article shows. For a single row of plants a bed eighteen inches wide is sufficient—but it is rarely necessary to plant a bed of this size, and where it is not necessary, I should not advise it.

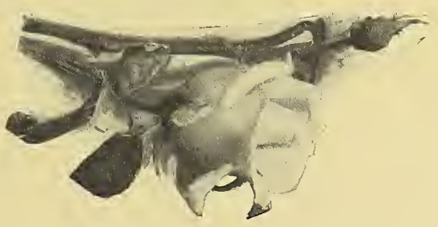
With the garden planned and the design laid out in the ground, proceed to the preparation of the beds, summoning to your assistance much patience and great determination to be thorough. For the only right way to prepare these beds is to take out the earth to a depth of two feet—eighteen inches will do if the soil is naturally well drained and neither heavy nor sandy—then to provide drainage with a four-inch layer of cinders or gravel, on top of which should go two inches of well-rotted manure, and on top of this the soil which has been removed, well mixed with about one-quarter manure. This must, of course, be forked over until the mixture is perfect. The bed, when it is ready for planting, should be crowned so that its center is three or four inches higher than the surrounding turf, while its margins are on a level with this, or just slightly below it.

When you come to look into the subject of roses, probably by studying some rose grower's catalogue, you will find that there are several kinds. The classifications of the garden roses are, Hybrid Perpetual, Hybrid Teas, and Teas. In addition to these, there are, of course, miscellaneous and climbing roses, but neither of these need be taken into account. Roses that are going into the garden will be of the three first mentioned. Hybrid perpetuals are not very truly named, for they are not perpetual, as all honest growers will acknowledge. They





Hiawatha, a desirable single climber, has intense crimson petals shading to white at the base









are, however, very hardy and strong of growth, and they flower freely during the month of June—so there must be an abundance of them in the rose garden. The real gems, however, are the hybrid teas. These are the plants that bloom—actually bloom—all summer. Although they are not so hardy, they do not require more protection than will be needed for best results with even the hybrid perpetuals. And the variety of these now is so great that one could really make a garden entirely of them, and have in it practically every kind and color of rose. In addition to these, some tea roses should be included. Tender though they are, nothing will ever take the place of these exquisite flowers, with their fine foliage and wonderful odor. My own proportion would always be, in a dozen plants, three hybrid perpetuals, five hybrid teas, and four teas—and this proportion I should adhere to whether I were planting twelve plants or twelve hundred.

Upper photograph, Frau Karl Druschki; lower, Mrs. Sharmon-Crawford a rich pink in color

In setting out the plants, put hybrid perpetuals twenty-four inches apart, hybrid teas and teas eighteen inches. Aside from the depth at which they are to be set there is no difference between planting roses and planting any ordinary shrub. But the question of depth is an important one. Roses, of course, are usually not grown on their own roots, but are grafted on some other stock. The point of the graft is plainly discernible, however, even to the amateur, if the plant is examined with the expectation of finding this. This point, on plants that have been properly grown, is not more than two or three inches above the root. Set such a plant low enough into the ground to insure covering this point of union between the stock and the graft with at least one inch of soil, or more, up to two inches. Possibly, however, you may have purchased roses which were not grafted as low as this. If this is the case, and your plants show more than three inches of stem above their upper roots, there will be no use attempting to cover the stock with soil, for in doing this it would be necessary to set the roots themselves so far below the surface that the plant would die. Do not get such specimens if you can avoid it, for they are really not worth having.

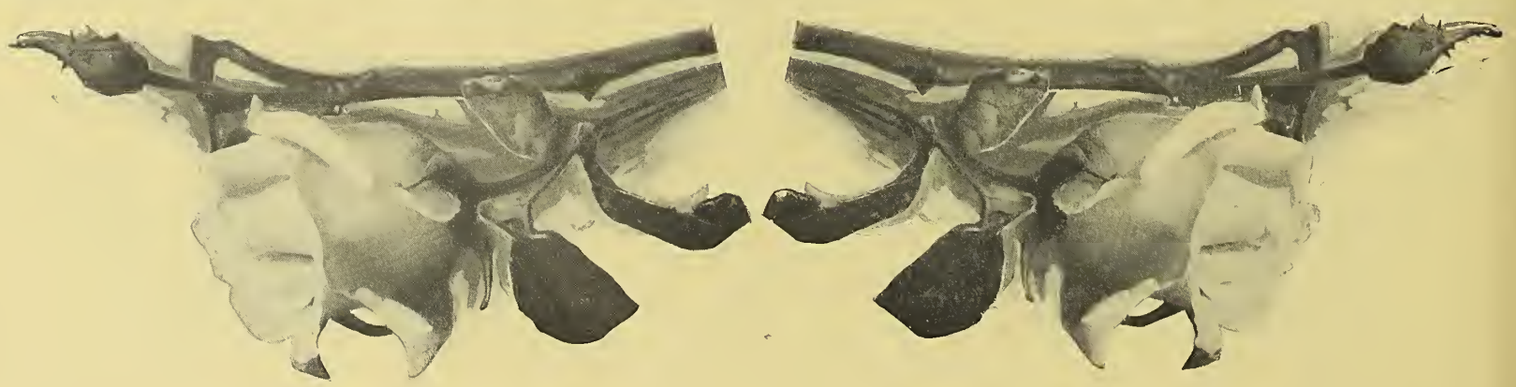
Arrange the roots in the hole which has been dug for them, carefully spreading them about in the positions which they occupied originally, as nearly as possible. Do not attempt to plant when the soil is very wet. It should sift lightly and loosely around the roots and rootlets, and should be worked in among them by tamping with a round-headed stick, while the plant itself is slightly shaken up and down. When the hole is nearly filled, pour a little water into it gently. Then, when this is settled, put on the remainder of the earth. When the entire bed is planted rake it over to an even, smooth surface. The plants, of course, are dormant when this work is done, and consequently they do not require further watering.

Their tops should be cut back to about two or three stalks of four or five buds. Usually it is best to cut branches off just above an outstanding bud, rather than one that turns to the inside of the plant. This encourages open growth. Never mind if the bushes have started to grow when they reach you. Cut away the shoots ruthlessly and with every confidence that new ones will come from farther down on the branches. All of this class of roses blossom on wood of this year's growth, consequently the more encouragement such growth receives, the more abundant the flowers.

As early as it is possible to work the ground in the spring is the best time to plant all roses. But hybrid perpetuals may be set out late in the fall if it is necessary or desirable to do so. They must, of course, be protected if planted then, and are better for protection anyway, even when spring planted.

All roses, whenever planted, will have grown greatly by fall. When the leaves have finally gone and the plant is unquestionably dormant and asleep for the winter, cut back this growth to

(*Continued on page* 498)





The Railroad Tie House

A HOMELIKE, ARTISTIC DWELLING OF STONE AND HALF-TIMBER BUILT FOR $1500.--WHAT BUILDING ECONOMIES MAY BE ACCOMPLISHED BY THE USE OF LOCAL MATERIAL

BY FREDERICK S. LAMB

Photographs by the Author

TO everyone sooner or later comes the problem of the building of a home. Does it come with preparation, or does it come on the spur of the moment—unexpected?

To us who for years had looked forward to this event, to us who had wandered through the fields in search of a location, to us who had dreamed of this little spot apart from the rest of the world where thought and meditation were a possibility, it did not come unannounced.

Night after night as a commuter, leaving the train and walking to what was then our abode, I passed many important country residences and at the same time many cottages of workingmen, and it occurred to me that it would be possible to build something better, for the same expenditure, than had been obtained in the workingman's cottage—for are we not all workingmen, and is not the problem of home building the same to us all?

Upon inquiry it was found that these cottages cost $1,500, $1,800, or $2,000 and upwards; and certainly the result was anything but satisfactory. And then came the idea—why could not something better be done for the same expenditure?

It would be an interesting story to relate our interview with the old farmer who had known us from childhood, and who wished us to purchase the corner lot nearest the railroad station. It would be interesting to follow our progress from the little village through field after field, until we arrived at a knoll at the border of the woodland, where with much regret upon his part, and the fear that he had robbed us, we selected the site of our future home. It was an old abandoned field, no longer farm land, no longer even good pasture land, but what is known as "poor man's land," with its cedars and birches, its weeds and brambles. And here, overlooking the great valley of the Hackensack, with the deed of the property in our hands, we started.



Instead of the conventional awning a pergola-like roof was formed of lath. Over this vines were trained

Of course there was a design, drawing its inspiration from the chalet on the mountainside. Of course there were the necessary drawings and plans, pondered over thoughtfully night after night—and then the work started. As the ground sloped to the west, but half the foundation was excavated for the cellar, and an initial saving of expense made thereby.

The design was for a stone and half-timber construction. The timber was found in the woodland nearby, was sawed at the local mill, and was delivered at short notice. The module of the house was selected as eight feet, and as this was the usual length of a railroad tie, we bought one-half our timber as railroad ties at one-third the cost of ordinary timber. These were of chestnut of the very best wood, but by a strange



From the idea of the mountain house which fits so snugly into the countryside the design was chosen. By proper planning eight-foot railroad ties served for most of the timber and the stone work was taken from an old wall

freak in prices, or perhaps on account of competition, were considered less valuable than other timber lengths. The stone not only for the foundation but the walls of the building, was found close at hand in an old stone wall which had for years divided the fields; these, with their beautiful lichens and their weather-beaten surfaces, were most admirable material for our purpose. Again, they cost nothing, and often in the late twilight the wandering neighbor was surprised that we should be at work, selecting with care and attention stones from this old wall.

The cellar completed, the main floor was made up of a large living-room, twenty by thirty feet, with a central fireplace. There was a guest-chamber, a pantry, a closet by the stairs, the servant quarters and a kitchen, large, light and roomy, facing the northeast, so as to be cool and livable in all times of the summer.

As the building grew, the upper floor took shape—a large bedroom with numerous closets and windows looking not only to the north or south



The garden depended upon foliage for its first beauty. There is much grace in the tall cedars, and the castor oil plants properly used for foliage mass effects in the background of the lawn border

but also to the west, with its magnificent view of the Hackensack valley. This was right over the living-room. Behind it were other bedrooms, and a bath, fitted with a shower, that looked from its little windows toward the woodland. Above these rooms was the attic, to be used not only for storage space, but as a protection from the heat of midsummer weather. The window spaces throughout were not separated as is ordinarily the case, but clustered together, with mullion, with casement sash and leaded glass. In nearly every case each wall contained but one group of windows, thus permitting the light to come but from one point. This, as everyone knows, is the most restful light. The windows were also arranged to take the best advantage of the breeze, no matter from which quarter it might come.

The sloping roof, reminiscent of Switzerland, was extended to form the porch to the west, and the porch at the kitchen end, with its utilitarian possibilities. Under the porch at the front was found space for the storage

of the logs which in the fall sparkle in the open fireplace. Great steps led down to the lower level; a pergola most naturally found its place there, and walls, again of field stone, cluster in at the foot, encircling flower-beds which in season are masses of variegated color. The chestnut pillars and half-timber construction were stained a deep olive; the spaces between were filled with stucco, the cement being kept its natural color. The eaves, instead of being scant, were double or treble the ordinary size, projecting to the north and south, casting deep shadows upon the side walls as the sun traveled its course from morning till night. The chimney, such part of it as showed above the roof, was also made of the field stones, and so from foundation to peak there was a harmonious combination not only of line but of color: the gray stones with their light and shadow, the strong uprights with their deep tone of color, and the beautiful gray of the plaster.

The doors were all Dutch doors making it possible to leave at all times, if so desired, the upper portion open. While the exterior finish of our little home was of stone and plaster, the interior finish was of wood. In every room on the main floor the timber construction showed in the ceiling. The side walls were of yellow pine, and in the main room a large fireplace had its timber construction as well, with closets at either side to act as wood boxes. The color scheme in the main room was a soft gray, while simple rugs of green matting were on the floor; in the guest room, a beautiful peacock blue; the pantry was white, and the kitchen a serviceable wood color. These restful colors were obtained in the majority of cases by the use of a simple kerosene stain, again adding materially to the economy of the work.



The windows instead of being separated were grouped in most cases, and each room had light from but one direction

Before the house was fully finished we camped out, and no one can describe the joy of perfecting the final details of such a home. Each day brought its new problems. The conventional awnings would have been out of place on such a home, so we thought out a plan: they were to be constructed of lath, each eighteen inches to two feet in width, and vines trained over them, thus producing a beautiful effect without as well as within the house. For the sunlight flickering between the leaves and the many little tendrils hanging down always cast a cool and restful shade. Outside the casement windows at either end of the dining-room were flower boxes, placed at a height so the flowers could be seen from the room as well as from the outside. These, with their flowers and hanging vines of green, made a most attractive setting for the windows. The porch also had its border of flower boxes. The pergola, covered with its flowering vines, framed the west front of

(*Continued on page* 497)



The eaves were double or treble the usual extent and caused a shadow along the wall in the sunny part of the day



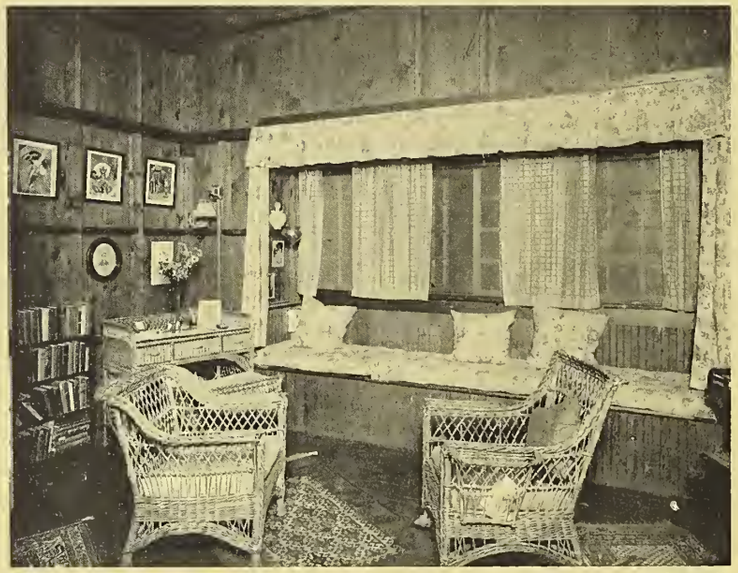
The half-timber work was of the sort used in the English houses; that is, was structural rather than purely decorative



A log camp in which the space below the veranda wing, caused by the sloping ground, is latticed and used for storage purposes



This bungalow, distinctive in its roof line projecting well beyond the walls and an entrance through the arbor, cost seven hundred dollars



Cretonne hangings and cushions brighten the window-seat, and the willow furniture is at once distinctive and appropriate



The fireplace may well be the central feature of the bungalow living-room, and its style should harmonize with the general scheme

Camps and Bungalows

LITTLE HOUSES THAT ARE INEXPENSIVE AND ATTRACTIVE



The shingled wall type is appropriate in certain locations. The roof in this case is papered throughout



In this four hundred and fifty dollar bungalow sheathing boards overlaid with bark conceal the frame building



A Staten Island bungalow, built at an approximate cost of $3,500, with an unusual and attractively outlined broad roof



The rear view of the bungalow shown in the upper right corner of the opposite page. Stucco lends permanence to the small house



Woodwork is attractive in itself if the stock is selected and arranged with due regard for color and grain



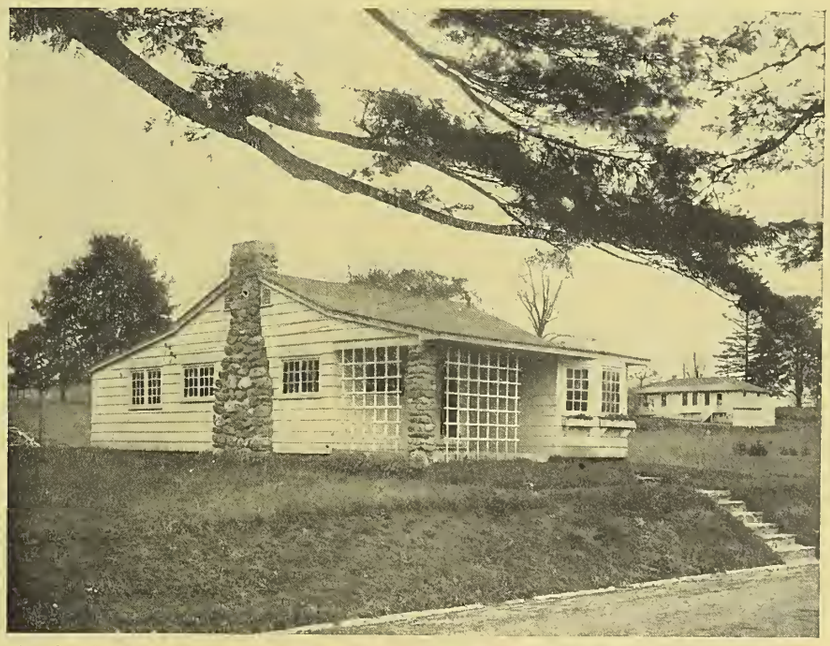
The plastered walls are left unfinished, but rich coloring is introduced in the four frieze panels centered in the wall spaces

For Summer Dwellings

SUGGESTIVE DESIGNS ADAPTED TO VARIOUS LOCATIONS



An unusual example of the value of strong horizontal lines in making the bungalow seem low and broad



A pleasing combination of white-painted shingles and rough masonry of field stone laid up with deeply raked joints



The addition of an old Dutch door and knocker, trellises for climbing roses and ampelopsis, and casement windows in place of the original small lights, transformed the building

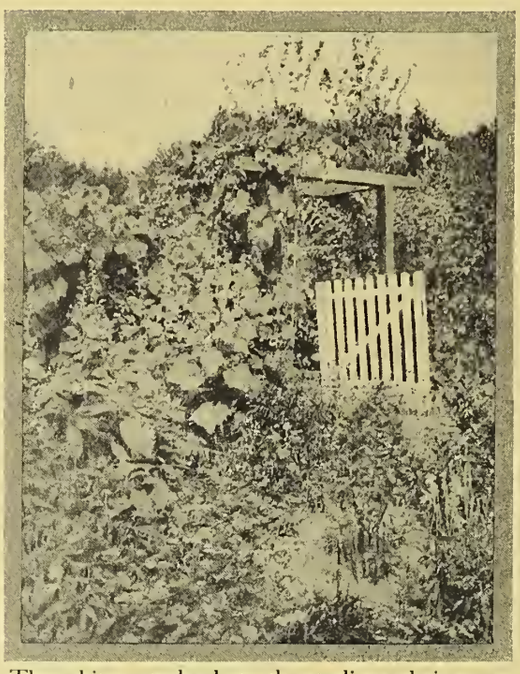
The White Gate Studio

A SMALL BUILDING TRANSFORMED THAT OFFERS A SUGGESTION FOR ONE WHO IS PLANNING A SUMMER COTTAGE—THE POSSIBILITIES IN EFFECTIVE BUT INEXPENSIVE ARRANGEMENTS AND FURNISHING

BY MARION S. DITMAN

Photographs by the Author

THE White Gate Studio lies nestled in its tiny garden, remote from every passerby who does not know what charms lie hidden behind the wicket gate. To be sure, the studio once was known by the name of Pigeon Cote, but the cote was abandoned before the time we ever thought of having a studio. The little building was severe in outline, but that was a feature which had to be left, and the only embellishments we could afford were casement windows to replace the 8 x 10 lights, an old Dutch door with its knocker, a settle, a few trellises and some vines. The selection of vines was a subject of much discussion, but finally we chose a trumpet vine to grow over the dark room, ampelopsis for the chimney and roses for each side of the door, a Tausendschon to the left and a Hiawatha on the right, and *Clematis paniculata* for the side trellis. These have all grown satisfactorily, and have been pronounced a success.



The white gate leads to the studio and tiny garden which are so hedged in that absolute privacy is attained

The inside of the studio was no less interesting to create, and by the end of one month it was finished. There are two rooms only, one a photographic developing or dark room, 7 x 7, and the other a peculiarly shaped room, 10 x 30. The floor is of concrete with a surface of red cement, a fireplace the width of the room and a red tile hearth 10 x 10 to go between Dutch seats. Then with the ever-useful composition board, we covered the walls and ceiling, allowing the beams in the ceiling to show. The lower portion of the walls we papered with a golden brown grass cloth paper, tinted the upper portion a pretty buff and treated the ceiling in the same way. The woodwork we stained a dark brown with a simple stain made of burnt umber with gasoline.

Now came the time to move in, and rag carpets, gate-legged table, Windsor chairs and flowers on the sills of the pretty casement windows which open on the garden in front and on a field of poppies in the rear made the room very attractive.

In exchange for an expenditure of four hundred dollars we had a charming studio, complete in every detail even to electric lights and running water.

The White Gate Studio soon attained a great reputation due to its simplicity and charm, and the little extras which count for so much were soon contributed. A crane and kettle for the old-fashioned fireplace were the first gifts, Hessian soldier andirons came next, then sketches, books, pewter ware, vases, brasses, growing plants and dozens of things poured in. The principal item is a royal samovar, the gift of a Russian connoisseur, which furnishes to perfection the gate-legged table, and with it forms a social center in the room.

There is, however, a spot more potent than the cozy chimney corner, and that spot is the garden.

Sweet alyssum, fragrant with the morning dew or the noonday sun, tumbles over the edges of the path that leads from the gate to the cottage door. A profusion of heliotrope, mignonette, daisies, larkspur, foxglove, hollyhocks and a dozen other grateful bloomers fill the little plot before the doorstep, knee deep with blossoms.

The garden, only thirty feet square, is entirely enclosed. On one side nestles the cottage itself, its door shaded by a plum tree and its end guarded by a lovely old quince in which Jennie Wren and her brood have pre-empted as their summer home a rustic sphere resembling a hornets' nest.

On the other sides the boundaries are a high *arbor vitæ* hedge, a grape trellis and a dense screen of *Cobœa scandens* mixed with morning glories, stunning dark green backgrounds for the planting within. Absolute privacy is the feeling aroused in this tiny garden, for even the entrance is barred by a gate that clicks, and guarding the white gate is a Cape Cod sailor boy who whirls his tiny oars in consternation at the approach of even the slightest breeze. By June of the first year the wealth of the growth was something to be marveled at, for we had not spared water every evening, and the perfection of form and color of the flowers was nothing short of a miracle. The gate would say to me each morning, "Come in, Come in," the flowers murmured "Stay a while," and the settle at the cottage door said, "You must sit here for a spell"; and I would always accept that invitation.



A Russian samovar furnishes the gate-legged table and with it forms a social center in the room

The doorstep, after all, is the keynote to the place. From the settle I sit and watch the bees carry their heavy loads of honey from the two beautiful standard fuchsias which give a little air of formality to the cottage doorway. The wrens sing their sweet notes of love from the blossoming quince, and the little garden offers up its nightly gift of fragrance to do homage to its author, the sun.

As in any garden, the true meaning of its beauty cannot come to you until you have sat in it a while in silence. Then and then only can you know it, and when this thing of living beauty has been created by your hand out of a dream of your imagination, your cup is happiness and your reward is great.



At the left of the entrance are the fireplace and settles. The half door with its appropriate knocker is especially attractive



The fireplace extends across the full width of the room, and it has a red tile hearth ten by ten feet between the Dutch seats



For the house occupied only in summer this furniture with a lattice of willow gives a bright and cheery effect and lightens the appearance of furniture that is all of solid wood. The willow panels are in natural color, the wood finished a greenish tone

Putting the House in Summer Trim

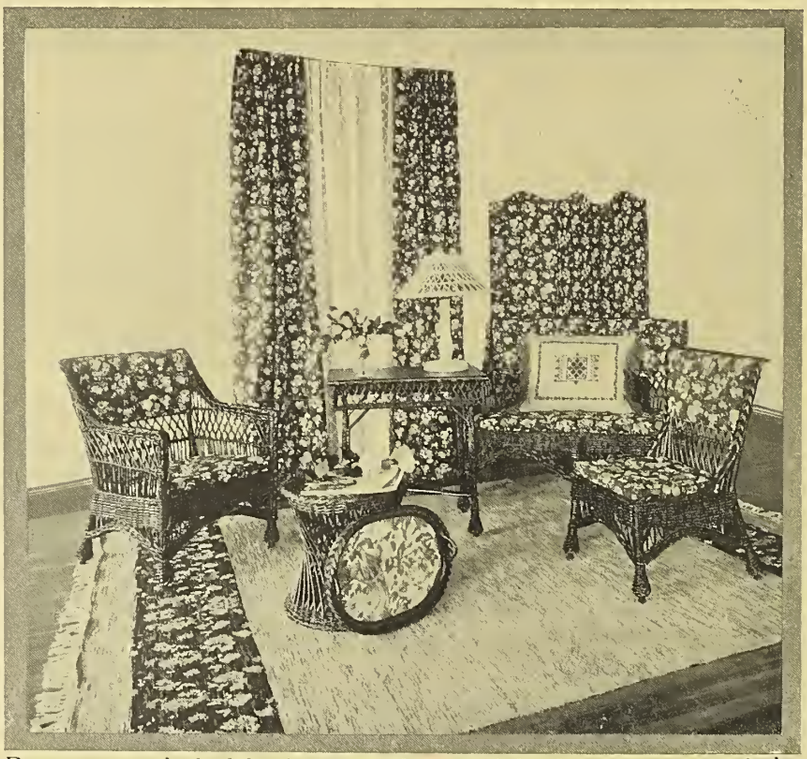
THE FURNITURE, HANGINGS, UPHOLSTERY AND RUGS THAT WILL MAKE YOUR HOME ATTRACTIVE IN SUMMER OR GIVE A SENSE OF COOLNESS TO THE HOUSE OCCUPIED ONLY IN WARM WEATHER

BY LYDIA LEBARON WALKER

Photographs by Courtesy of Manufacturers and Dealers

THE decoration of summer homes has a distinctive charm. It partakes somewhat of the comparative unconventionality that characterizes summer life itself. In a word, the difference between styles respectively of summer and winter homes, takes its note from the life of the particular season. And as the life of summer is a relief and foil against the more stressful demands of winter, so the appropriate houses should emphasize that variety. Change is often a form of rest.

There are possibly several ways of accomplishing this change, several ways to modify winter's dress within the house to the appropriate light costume of summer. Some of the schemes here illustrated show this. For instance,



Rugs may now be had for the summer house with borders woven to match the main design of the cretonne

in entering the hall of the summer house revealing the foliage paper, one observes that the atmosphere of the woods is not left behind. There is a continuance of perspective, scenic suggestions, glimpses of opening vistas where one might imagine the leaves still swaying and the birds still singing. The same impression of the open continues when one passes through the wide doorway into the living-room. The rather plain walls are in accord with prevailing decorative taste. The paper is a remarkable reproduction of woven raffia, on the same order as grass-cloth, only coarser. The softness and freedom of the forest-fringe above are grateful to the eye. So cleverly interwoven are branches and foliage that they reproduce

the forest aspect, not omitting clearings disclosing wooded hills and stretches of river. The furniture in this room is of willow, the color here is white and in the hall green. It serves to retain the light and woody atmosphere.

An altogether different type of decoration is disclosed in the cosy dining-room in the arts and crafts style. Perfect harmony is preserved in the paper, furniture, lamp, and even the little window-box. Special mention must be made of the paper, since the design is not only new but lends itself very readily to various schemes of decoration. However high the dado, the fruit-crown cannot fail to fit and match correctly. The crown may be omitted, as seen under the window in the alcove. There is no lack of finish. Brown is the color in this particular room, to accord with the furnishings. Where other furnishings are used other colorings are available, such as green and white, blue and white, emphasizing coolness and daintiness.

As it frequently happens country houses are done completely in chintz, it would seem fitting that one or more of the rooms at least should be in line with this vogue. The one illustrated has the charm of an old block-print in both paper and fabric, reveling in flowers, birds and baskets. While the design is French the general style is English. Both the paper and linen may be alike. There is a rich play of color, charmingly blended, not unlike antique fabric. They are well suited to main lower rooms. The continuation of such a motif thus is prevented from becoming monotonous by being broken by wide white woodwork and discreet placing of the furniture and the pictures.

The furniture merits a passing word. In the chair, for example, the mahogany arms against the white enamel present a contrast in pleasing accord with the spirit of the paper. It is an adapted form of the English wing type.

The morning room shown is none the less cheery, but it is more conventional and stately. The impression is due to the correct and interesting paneling of the paper following the structural lines of the room. The treatment above the small door and beside the large one is particularly felicitous. While the paper comes even in the shimmering cloth of gold, this may be too pretentious for summer simplicity; and it is an advantage that one is able to obtain so many other tones that any color scheme may be adopted. The white lines of the trim are reflected, as it were, in the furniture. The chairs are Hepplewhite, adapted with a view to strength and durability. A rather attractive feature is the introduction of cane in the desk.

A new willow furniture, made expressly for summer houses, admirably fulfils its purpose. Its principal characteristics are green stained wood, shaped somewhat on Mission lines and introducing willow in the place of cane. The former has the advantage of being more open and probably cooler while sacrificing nothing in point of durability. The willow is in natural color. It is the willow that sounds the note, so that any furnishings introducing a lattice are appropriate. The dining-room and library photographed serve to convey the general idea. The furniture throughout is as distinctive as it is appropriate: indeed, it has elements of novelty and character to a marked degree. The shapes are strikingly unique without being extreme. And best of all, the prices are not excessive.

Possibly some of



Rush seated chairs in peasant style are decorated with garlands



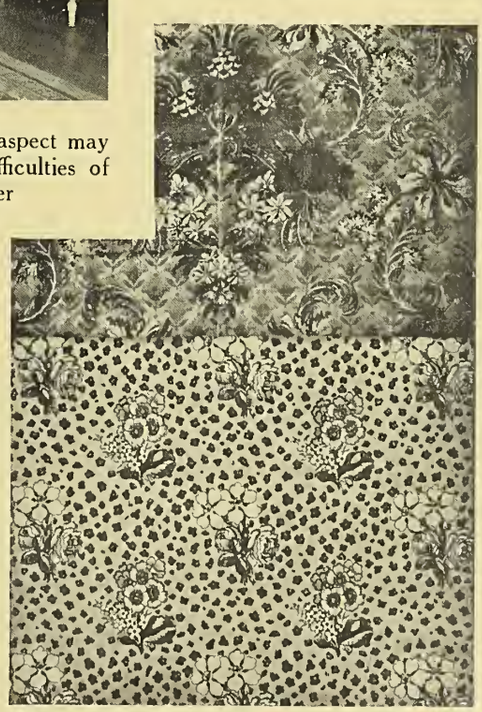


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An interesting treatment for a morning room of slightly formal aspect may be achieved by paneled paper that fits all the structural difficulties of molding and door. At the right is a pleasing block print paper



Cretonnes vary from the softly blended tones of the upper to the bold, brilliantly colored figures of the lower pattern



Two new papers which may be duplicated in fabric; above the Watteau design, below, a modern pattern with striking contrasts

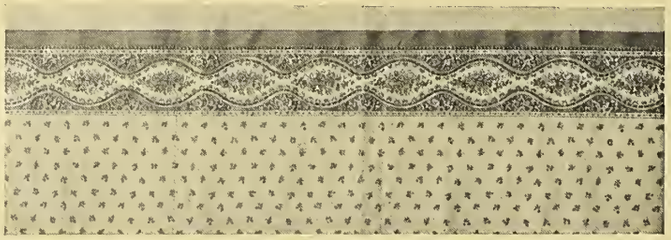
us may retain early recollections of curious pictorial furniture. The peasant furniture now appearing possesses that feature as well as a certain individuality of shape. Just as a peasant's garden is not confined to a single species of plant so one finds a variety of flowers adorning a single piece of this furniture. This is apparent in the interesting chair shown on the preceding page. While the nosegays conform in a general way to the contour of the different splats, they are not too studiously conventional. This Italian peasant furniture may be had in a variety of pieces. It has the advantage of being equally appropriate in a simple summer cottage or a more pretentious villa.

Another type more elegant than the above may be seen in chairs and tables essentially French, reflecting the Directoire impulse. Perhaps they are most appropriate in the finer veranda rooms where their classic lines, resembling the carved marble furniture of Pompeii, is particularly suitable.

The cretonnes and printed linens show a marked trend toward strong designs and colorings. Chinese motifs and scenes are much in evidence. Of the two examples shown, one might almost have been taken bodily from a native tea poster. It is a far cry from it to the fetching little design of Chinese lanterns hung from trailing vines. Between these two extremes there is a world of variety to choose from. Among the motifs birds also are more popular than ever, birds large and small, cockatoos, peacocks, birds of paradise, blue birds, etc. English chintzes in general are in high favor. One has no difficulty in choosing suitable flowered cretonnes because there is such a profusion of them. One can commend the double-faced variety for window hangings and portières. Having both sides alike, it requires no lining, saving both expense and labor.

The impulse toward matching wall-papers and fabrics, continues and is even increasing. A new idea is to have the material match the border or binder of the paper rather than the body of it. This same tendency is carried further and applied to rugs, which are now made with borders to match fabrics. All of this goes to show a sort of development in decoration which makes towards an almost classic unity in furnishing. This applies to body color also. In the room illustrated the fine willow furniture is stained dark red. This same color is used in the roses of the cretonne and in those of the rug also. The upholstery, screen, lining for tray and lamp shade are all in the same patterned cretonne. But the notable touch in the room is the rug with its border exactly matching the design of the fabric. There is a fascinating completeness in the ensemble that appeals to the artistic.

Among the simpler papers, three at least deserve special mention on account of their associations (shown on page 481, right side). The striped paper when in blue and white is an exact copy of the wall covering on the Empress Josephine's quarters at Mal Maison. The gray

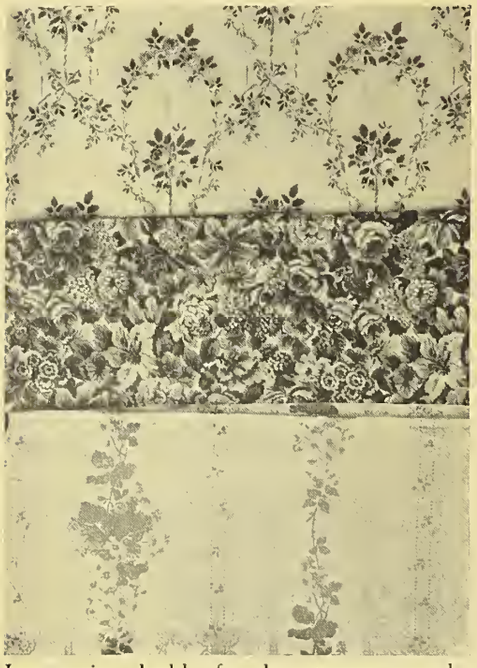


Instead of a crown the tones of a small figured paper may be duplicated in strips to panel the room or to act as a border

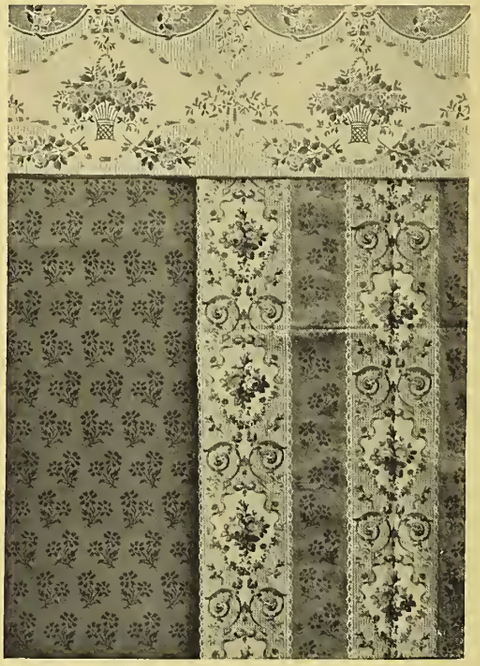


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The paper here is a reproduction of woven raffia in tones to blend with a forest frieze



Inexpensive double faced cretonnes may be had in such patterns as these. This obviates the necessity of a lining



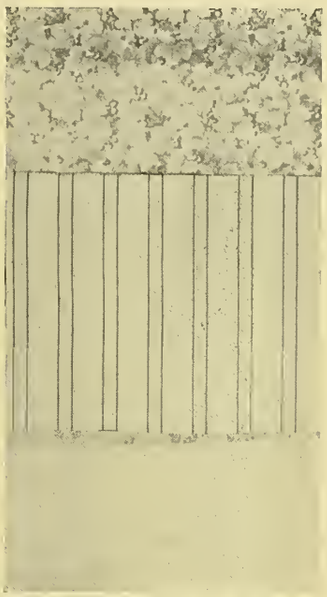
The main features of a wall paper crown may be emphasized in strips to panel a plain or small figured paper



Extremely decorative Chinese motives are in demand



The summer house is well fitted with the colorful peasant pottery of various sorts. It is decorative and durable. The table cover is a Liberty pattern appropriate for summer use



The striped paper in the center is a copy from Mal Maison

foliage design interspersed with lilac pink berries is identical with that used on the walls of the sitting-room in "Fanny's First Play." And the lattice paper when in gray and lilac is ideally suited for a room of a grandmamma. One can picture her clad in lavender and old lace, sitting there by some sunny window.

Before concluding it is appropriate to mention the table service suitable for summer houses. Not lacking in artistic merit, it has yet a certain rural crudity about it, where a Sevres porcelain would be out of place. There is a fitness about the very names of the wares, such as Black Forest, Rusticana, Orange Ware and the like. Because the Black Forest is not merely a name, the artistic porcelain pottery actually is made in the regions bordering on those famous woods. The decorations on a deep cream ground are in rich rose pink, old blue and green; and the subdued tones seem to catch the shadow of the old trees. The Rusticana ware, too, is German, though the decorations are less pronounced. With the same deep cream ground, the decorations are wild flowers in natural tones. Orange Ware is from Austria, and a trifle more finished in its decoration. The greens, blues and yellows are strong yet mellow, really fine colors without any crudity. But what strikes one most of all is the shapes. This is seen in the candlesticks, flower holders, egg servers and cups with saucers attached for the broken shells.

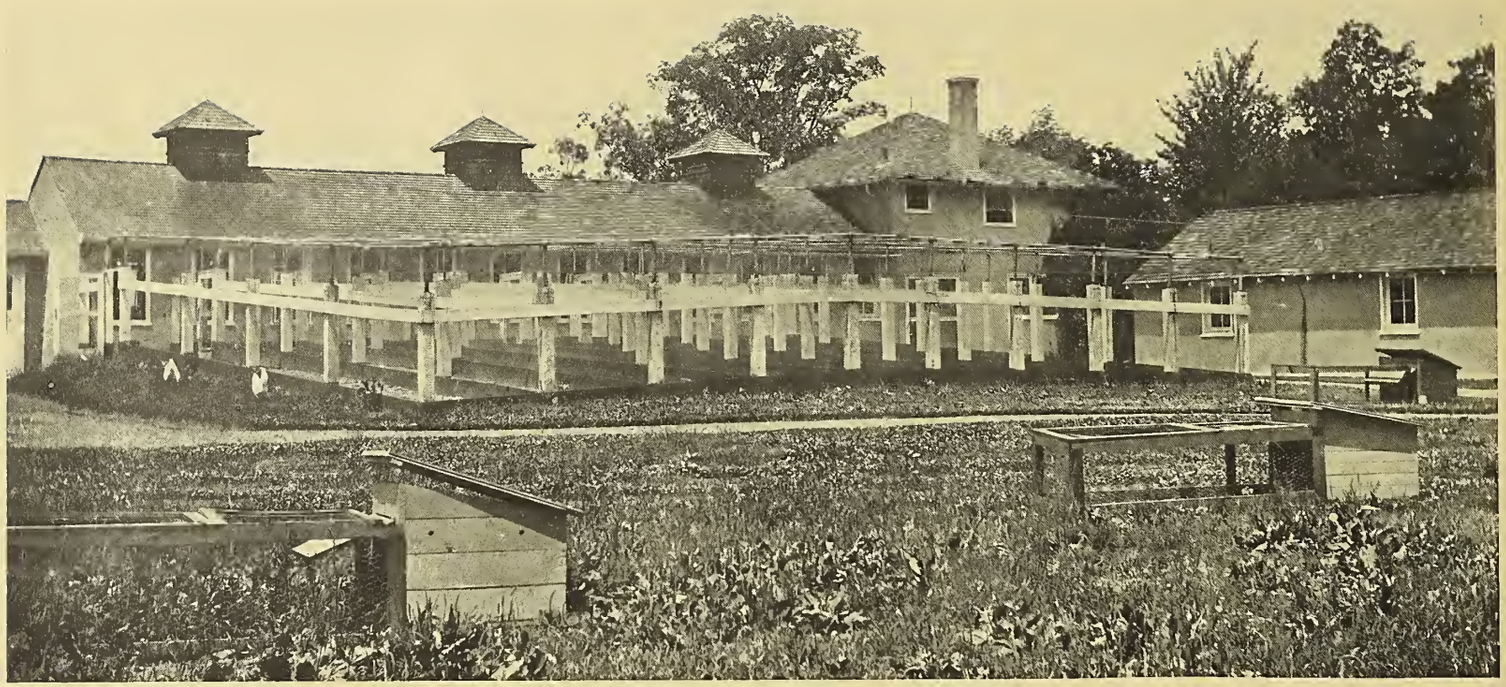


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With the sturdy furniture in natural finish such wall paper treatment as this is distinctly appropriate. The crown may be omitted, as beneath the window

All of these elements might be classified generally as peasant pottery, and it is no less picturesque than the interesting folk with which it is associated in different parts of the world. And in using such ware in his country home one may feel himself thus linked in a way with the rural life of many a genial clime.

Besides the wicker, willow, white enamel and other sorts of furniture mentioned as applicable to the summer home furnishing there is still to be mentioned the serviceable windsor and rush bottom chairs. These are suggestive of cottage life, long lasting and typically American. In the same way the fascinating tables and chairs of oak or ash that might well have stood in Ann Hathaway's cottage should be spoken of.



Exercise is essential for good egg production. The poultry runs here provide opportunity for fresh air activity and are so designed that they are not unattractive

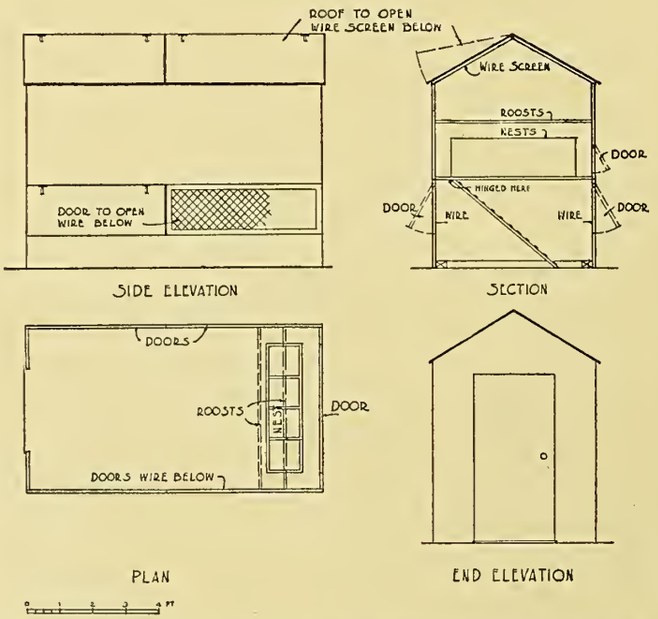
Building the Poultry Quarters

PLANS SHOWING HOW TO MAKE CHICKEN HOUSES OF VARIOUS SIZES THAT ARE NEAT AND ACCESSIBLE AND WHICH CONTRIBUTE TO THE GOOD CONDITION OF THE BIRDS

BY ALFRED HOPKINS

Photographs by the Author

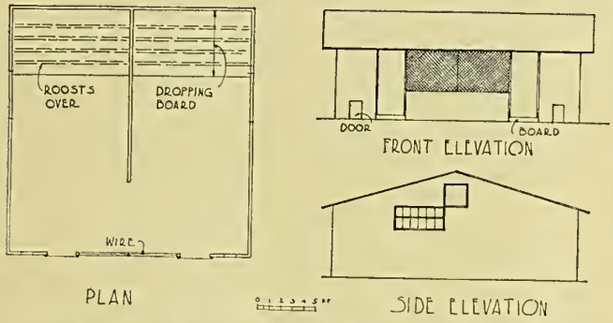
THERE has been such a deal of controversy, at least in the author's practice, over the requirements of the chicken house, that he has felt an extended discussion of this building had better be left to those who are possessed with a knowledge of the subject, more satisfying to themselves. Every chicken man has decided notions of his own as to what is necessary for the successful chicken house, and no two men seem to agree as to what type of structure will best assist or persuade the hen to lay. A shortage of eggs has so frequently been assigned by the master of the hens to faults in the architect's plan that this architect at least has made up his mind—as has everyone else interested in chickens—that no one really knows anything about them but himself, and that a proper chicken house has never been built and never will be, until it can be carried out in its entirety by himself and himself alone.



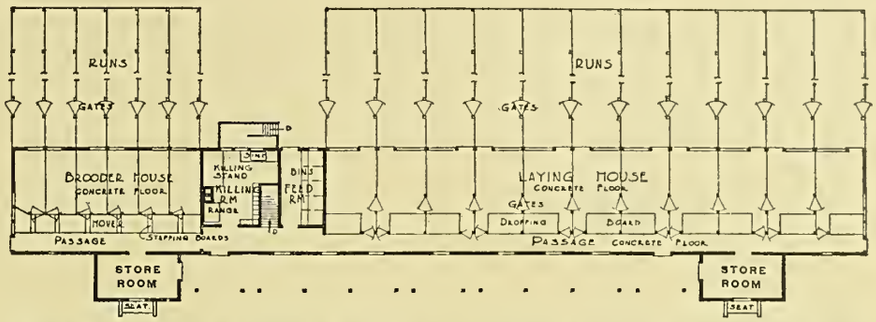
The plans of a colony house at Sterlington that embodies all the essentials for convenience and proper ventilation

What the hen needs more than anything else is fresh air, and to be assured of this it was thought that she needed almost unlimited range and plenty of room in her house. Crowding in the pen was the worst possible condition. A writer in *The Country Gentleman,* some years back, said that in the coop 10 sq. ft. of clear floor space per hen was desirable; this being exclusive of all passageways and floor space occupied by nests, roosts, etc. A certain Mr. Philo became enthusiastic over the idea of rearing chickens in the smallest possible space, and advertised that a successful egg farm could be established on a plot of ground 40 ft. square. We cite this as showing the very great differences of opinion that may be found with regard to the housing of the hen.

Undoubtedly, where space permits, the best method of arranging the chicken farm is to follow out the idea known as the Colony Plan. This is a separate and usually movable house large enough to contain a cockerel and from six to a dozen hens. On the Skylands Farm, at Sterlington, N. Y., the two systems of the general chicken house and the colony house have been carefully compared, and a decided preference has been

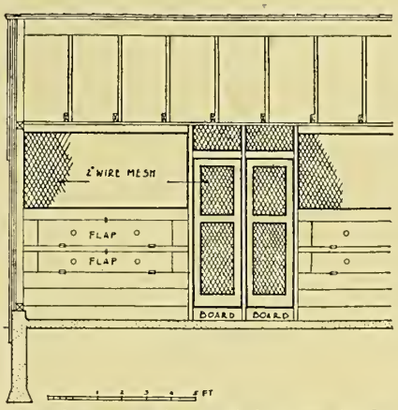


A type of the open front chicken house that is airy but may be protected from extreme weather

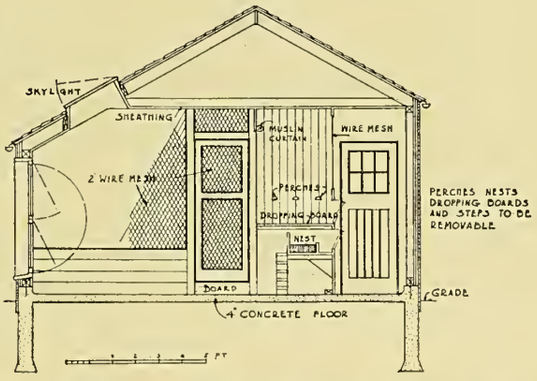


For a large place, the chicken house on the Brokaw Estate is designed to meet all objections

given to the colony plan. The colony houses are usually movable and located at a distance from each other, although this is not necessary and the individual houses may be placed near together and permanently located as shown in the lower right-hand corner of this page, the fowls roaming over a dozen acres during the day return at evening each to its own home. This type of house should invariably be used for breeding purposes, as the birds, unconfined and left to roam about at will, are more hardy on that account. The records at Skylands show that they also lay better. A drawing shows the colony house used there.



An elevation of one of the pens in the passageway of the large plan above



This section shows the disposal of nests and dropping boards on the Brokaw farm

This is a small building, 4 x 6 ft., which will house one cockerel and six hens. It is of two stories, the roosts and nests being above. The whole advantage of this type of structure lies in the ventilation. At the bottom of each long side there is an opening 6 x 1 ft. 10 in., which can be partially or entirely closed, either with a solid wooden shutter or a sliding muslin screen. This opening regulates the admission of fresh air in a very flexible manner. One side of the roof is constructed to raise in two sections, and the opening so made is also arranged to be partially or entirely closed with a sliding muslin screen. Some care must be used in regulating the ventilation in winter, but this method of housing is admirable in providing the birds with shelter without depriving them of fresh air. The chicken sleeps much more than man — in the winter time twelve hours out of the twenty-four, so that healthful surroundings during sleep are most important for the best condition of the bird.

The plan shown at the top (left) of this page is a type of chicken house which has many advocates. It is called the "Open Front," from the fact that the large opening, which should face the south, is kept open at all seasons of the year. To modify this somewhat in extreme weather, a muslin screen is put in the opening, although this is not at all necessary according to the enthusiast for this type of house. The high windows in the sides are for summer ventilation, and should be left open all summer. There is no doubt that the building would be cooler if portions of the roof could be raised in the same manner as shown on page 482.

Where space does not permit the Colony Plan, and the chicken farm must be restricted and the birds confined, the usual chicken house is a long building, divided into separate pens, these pens being about 8 x 12 ft., in which are kept from twenty to twenty-five birds. This allows 4 or 5 sq. ft. of floor space per bird. The

(*Continued on page* 501)



The large windows fold in the center and may be hooked against the ceiling when more air is desired



A good type of colony house for permanent location showing the method of raising the hinged roof



This picturesque shingle and fieldstone bungalow studio perched on a steep hillside offers suggestion for a very attractive summer cottage, its situation giving possibility for a very desirable room arrangement

A Studio Cottage, Briarcliff, N. Y.

Arthur T. Remick, architect



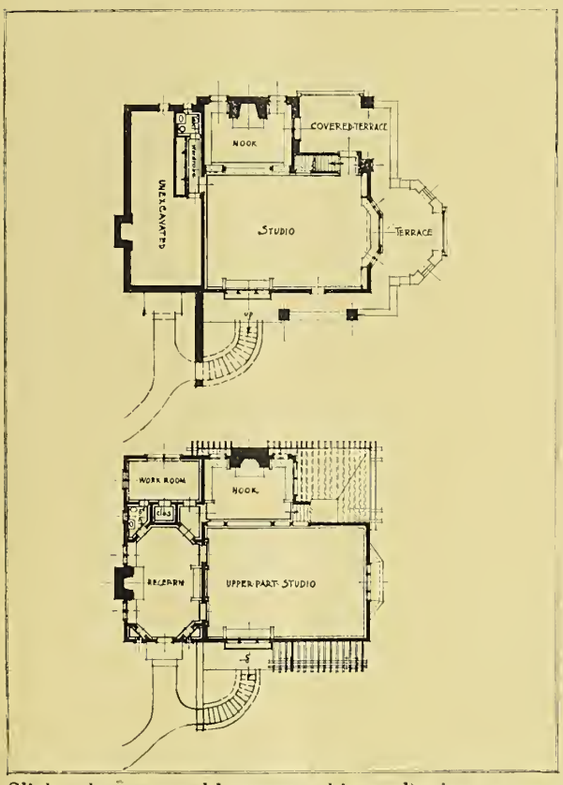
The local stone is built up to form a covered porch and terrace. The excavated slope saves in foundation cost



Few houses are as successful in fitting their situation as is this one. The excellent use of stonework helps this achievement



The fireplaces showing an effective use of tapestry brick in combination with stone



Slight changes could convert this studio into a very livable and attractive summer home



Another fireplace is flanked by well upholstered seats beneath the windows



Particularly pleasing is the treatment of the large window running from the floor to the roof. The wide seat at its base makes a delightful lounging place



The use of half-timber is not only decorative, but structural as well. The lighting fixtures are appropriate to this background



From above one would never judge that this low-roofed building could contain the spacious room shown above



Inside the House

Timely Suggestions and Answers to Correspondents



The editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope

A Door Catch Device

AN apparatus for opening the door of a high china closet, or any other closet that is fastened with a simple catch, was devised by a short woman who must have had a chair or ladder to open the door of her closet. The two lower shelves were within reach when the door was open; but alas, the catch was placed above the second shelf—too high for reach. To obviate this difficulty a piece of cord was tied to the button of the catch and passed through a small screw eye which was inserted a couple of inches back of the catch and level with it. The other end of the cord, with a brass ring attached, was left hanging low enough to be reached with comfort.

Now the only motion necessary to open the door is to pull the ring gently, which causes the catch to pull back.

Willow Covers for the Radiators

IT is possible to have made at a reasonable price a willow cover for the steam or hot water radiator which may be stained any color to match the furnishings, and form a useful and decorative summer table or shelf hiding the heater completely. A low heater thus covered makes a most useful tea table with the single disadvantage of being immovable. A movable cover can be made, however, if the plan of serving also as a separate table is given the willow worker as a requisite of the cover. If the heater is very close to the wall, it may be necessary to make the cover three-sided.

Summer Window Curtains

NOW is the time when the woman who looks forward to spending at least a part of the summer in her own country home turns irresistibly to thoughts of curtains. She knows her window curtains will do more than anything else to give the note of individuality one always looks for in the abode, be it the humblest or of the most pretentious order, which is intended for use during the season when humanity escapes to some extent from the conventional way of living.

There are many inexpensive materials which can be and have been used for window curtains, by women of original ideas, with surprising success. One practical housekeeper has recently had her large country house hung in eight cent cheese cloth trimmed with narrow cotton fringe; another is using cream colored seersucker, also finished with the fringe. The advantages of the latter material from the laundress' point of view are many, since such curtains will never need to be ironed. Such a simple and unattractive sounding stuff as unbleached muslin has numerous possibilities, and it is especially suitable for farmhouses, bungalows and camps. It can be used either plain or with simple line designs in color.

In a certain made-over farm house, occupied last summer by a crowd of college girls, the ground floor rooms all had window curtains of this muslin to which squares of Persian figured calico had been applied at artistic intervals, which was quite effective at the small paned windows. For a blue dining-room or one with Dutch doors and windows, these muslin hangings with a finish of the narrow red and blue cotton fringe are charming.

A seashore home which has its downstairs rooms and spacious veranda furnished with brown wicker cushioned with tan linen, is curtained with sail cloth. These unusual draperies are tied back with most nautical looking rope.



A magazine and book rack which serves also as a side table

Even for one who has no inclination toward anything the least bit freakish, there is endless variety in curtains. Hangings of plain, unfadeable Oriental silks are always good, with or without the soft white or écru muslin or scrim under-curtains; while hangings of flowered English chintz or fine French cretonnes are still popular at bedroom windows. One house furnisher, who makes a specialty of summer cottages, is now making up bedroom hangings of chambray; old blues, rose, green and buff, will appear in the quaint guest rooms of a certain hospitable country place.

Another authority on interior decorating is showing a lovely lot of fine cream colored lawns, with a crossbar of color to match the color scheme of the room. Whole rooms, windows, beds and dressing tables are hung with these pretty materials. Flowered lawns, too, are being utilized in this way. The curtains are apparently all plaited and not gathered at the top.

The owner of a Colonial house has introduced into it, old-fashioned curtains of fluted white starched muslin. These are to be held back slightly by oldtime curtain rosettes of brass, heirlooms of course. For a room with a brown color scheme the natural colored pongee makes satisfactory curtains, while the tannish cotton crêpe is both effective and durable. Dark blue is especially restful to the eyes, so if one can procure a material not likely to fade, it is admirable for the living or reading-room. In a well-known summer camp for girls, the curtains ordered for the main large room, this summer, are of dark blue voile, with a wide hemstitched border.

Authorities on house furnishing decree that in the downstairs rooms of country homes, curtains may be dispensed with altogether, thus pleasing most men of the household. This doing away with soft curtains is made possible by the arrival of a novelty in the shape of window shades of glazed, flowered chintz. These shades will not only do duty in shutting out the view and glare, but will serve as a decorative feature as well. They are on sale

ready for use, or they can be made to order from any pattern chosen to match the scheme of the house or room. For brightening a large living-room with a dark wall, one might select window shades with gorgeous red birds, perched on greenish brown branches, or just large, conventionalized red or mulberry flowers with ample foliage. For a brown room, shades with the long spray of golden glow as a decoration would be successful.

A fascinating glazed chintz, imported for use in a rambling Colonial country place, which has white woodwork, mahogany furniture and rag-carpet rugs, has a creamy background, dotted with blue butterflies in different sizes, and small rose tinted blossoms. One cannot picture just how lovely this particular shade of material is until it has been put up and the sunlight streams through it into the old-time rooms it is to beautify. Other shades which are proving popular, judging from the orders taken by a large furnishing firm, have the buff surface, showing tiny pin dots of black and small old-fashioned garden flowers of red, blue, yellow, etc.

For bedrooms, too, these shades promise to be particularly in vogue, especially the ones with light designs on the dark background, as they will answer the purpose of darkening the sleeping room. But, as with the regular plain window shades, one of a black or dark green is provided to keep out the very early morning light.

New Willow Work for the Porch

IN planning the furnishing of an artistic, comfortable, utilitarian summer porch, the most necessary "room" of the home, willow furniture seems to lend itself most willingly to any style of house. Willow chairs in the natural color may be used anywhere with or without cretonne cushions, giving an effect of springtime brightness and cheer; when colored a bronze, gray or blue, the effect is more of warmth and decoration. The natural willow, or a green stain, gives a coolness quite desirable, where the extreme heat of the summer sun makes the porch a veritable haven f refuge all day. Green is always restful to the eyes; one is apt to tire of other colors much sooner. Do not make a mistake, however, and have your willow stained or dyed such a vivid and shiny green that it will make the foliage look faded in comparison. There is a very soft moss tint, a green that is not gray, but savors of it, that is very cool and restful to the eye, yet artistic and harmonious. No bright stains should be used on willow; whatever color is selected, let it be of a soft pastel shade.

In selecting the easy chairs this year there is more of a choice than usual, for willow workers have been experimenting. The result of their experiments is quite noticeable in the weaving of chair backs, and if one is careful to ask for the "basket weave" back, he will find it "springy," and a comfortable rest for the back and shoulders, instead of the somewhat stiff



This willow hourglass table is convenient for piazza or lawn

and unresisting support that the old weave back affords. If he will also notice that the finish or braided trimming of the willow is set on flat, he will find that this method allows far more "give" to the chair than the old method of applying the braid to make a rigid finish.

The round willow breakfast table, with four graceful side chairs to match, is an almost indispensable comfort. The chairs, with sixteen-inch backs, are made to fit in under the table when not in use, so that they may readily be used on a small porch as well as a large one. A forty-two inch top table with four chairs costs thirty-three dollars, and may be had either with plain wood or with willow top—the former perhaps better if used as a breakfast table, although a very heavy felt or asbestos mat used under the breakfast cloth will eliminate the roughness of the willow. A willow lamp with electric connection (ten dollars, in natural or stained) provides for a supper room or for evening reading.

The new magazine and book rack, made with three shelves and two pockets, will prove a most useful living-room piece and also very serviceable as a side table at meal time. This can accommodate a willow tray with glass bottom over cretonne, or over real flowers, ferns or leaves, if desired. The rack is strong and stable and costs nine dollars.

In addition to the large willow table and the book rack or serving table, a small hourglass table with serving tray, sold for ten dollars, will be found most convenient for piazza or lawn use, it taking the place of the tea table in serving cold drinks. This is made all in one piece as in the picture, with stationary compartments to hold bottles and glasses; or the bottle basket alone may be had for four dollars, and an hourglass stool for three.

There are also hanging lanterns or lantern cases of willow, and shades for the porch electric lights, if one desires to further carry out the willow scheme, and the willow tea-wagon is always useful.

With this equipment in willow, not forgetting, of course, a few armchairs or rockers, a large willow basket to hold a common bowl filled loosely with wild or garden flowers, also a willow scrap basket, all forming a contrast with the bright colored rug and the cretonne, or toning in with rug and cretonne of pastel shades, a more delightful "living-room" cannot be imagined.



Here is some of the new willow work that is especially good. When not in use the chairs may be pushed under the table, out of the way



Garden Suggestions and Queries

The Flower Garden



CONDUCTED BY GRACE TABOR
Author of *The Landscope Gordening Book, The Gorden Primer, Old-Foshioned Gordening,* etc.

June in the Garden

EVERYONE feels—and rightly, too—that this is the month of results, rather than of planning and planting. But for all of that, the eleventh-hour gardener need not resort to a bed of geraniums as his only resource. Even procrastination does not quite merit such punishment; but it is not always the sin of putting off till tomorrow that is responsible for delaying the garden-making until June. The transient dweller, particularly, is very often obliged to forego a garden altogether, because of the exigencies of "moving day" and a general spring upset, or else be an eleventh-hour gardener.

Whatever the cause of delay, however, it results in a hasty scramble to do something, and do it as quickly as possible—hence the geranium "beds" and the pansy "beds," and all their kind, which are the things I would most like to help everyone avoid.

Arranging the Late Purchases

THE list of plants that may be purchased now, at florists and greenhouses and markets, is not an extended one—and geraniums and pansies are the very bone and sinew of it, indeed! So it is not these flowers that are to be taboo by any means; but the planting of them or anything else, in "beds" in the midst of the lawn, beside the porch, or anywhere.

Let us treat geraniums and all of the plants that are at this time available just as we treat the permanent garden material, dignifying them to a place in the garden picture rather than degrading them to an eccentricity quite outside all the laws of harmony and composition and good taste. They will reward such consideration.

The Value of a Regular Garden Plan

FIRST, then, there must be a little garden scheme—simple, easy to execute, and suited to the material at hand, of course—but very positively an idea none the less, which embraces the whole place, in that it takes into consideration the effect *as a whole*. It may be nothing more than borders each side of the entrance walk—this, indeed, is usually the best treatment that can be adopted for the rented, eleventh-hour garden scheme—but it has very positive value as a harmonious note in the general composition of "home and hospitality." Such borders, eighteen to twenty-four inches in width, planted with geraniums in a continuous mass, two deep along the back, with white English daisies before them, massed solidly also, are as charming and pleasantly effective as anything which the most forehanded gardener could offer. Or perhaps a combination of asters, pansies, and candytuft may be preferred, the former, possibly, in pinks only, that the color scheme may vary as the flower succession proceeds.



June is the month when the really distinctive flower effects become apparent. Why not plan for some feature such as this?

Whatever is planted, and whatever the scheme which the plants carry out, let the slogan be here as everywhere, *masses*. Plant geraniums close enough to hide the ground beneath them, and make of the English daisies and candytuft and pansies a thick, unbroken mat never less than two plants wide, preferably not less than three. In this way will be obtained a more pleasing appearance than with single plants.

Setting Out the Young Plants

MOVE the young plants from the boxes or baskets in which they come to the open ground preferably in cloudy weather—or after sunset. If the work cannot be timed to come at either of these times, shade them after they are set—by umbrellas, if you cannot rig up anything else for shade that will admit the air to them freely. Baskets set over them are too close for their comfort, and I do not like to see them used.

Do the work of transplanting first as transplanting is always done: that is, set the plants as deep as they grew, spread the roots to their true positions, sift the free earth carefully under and around them, tamp it gently, and pour in water when the hole is about half filled; then wait until this settles quite out of sight, before putting in the rest of the earth. Do not plant anything within less than twenty-four hours after a hard rain. Light summer showers that do not wet the ground more than an inch or two, however, may be ignored.

Caring for Summer Gladioli

AMONG the summer flowering plants the gladioli deserve special consideration in view of their magnificent colors and form. To get the best results from them requires a knowledge of their particular requirements, however, and after the essential problems of choice of location, preparation of soil, etc., have been satisfactorily attended to, the care of the growing plants should not be overlooked.

When the plants have attained about a foot of growth, give them occasional applications of liquid cow-manure and soot-water. These preparations may be given alternately once a week until the flower spikes appear. Then increase them until the first flower opens, after which the manure-water should be discontinued. After flowering has ceased, lift out corms and dry them, then cut stems and store the corms in dry place until the next planting.



Garden Suggestions and Queries

The Vegetable Garden



CONDUCTED BY F. F. ROCKWELL
Author of *Home Vegetable Gardening* and *Gardening Indoors and Under Glass*

Care of the Vegetable Garden

WHEN the planting of the late crops is finished, and the last blank spaces left in your planting plan have been filled in, it is very natural to rest on your oars for a while in the happy thought that you have got things nicely cleaned up and are entitled to a rest. Entitled to it you may be, but if you stop to take it you will find that it has to be settled for later, in one of two ways: either your garden will suffer from neglect, or you will suffer in trying to make up for lost time. For there is this great difference between the care of the garden and the planting of the garden: you may put off a job of the latter sort for a few days, or a week, or even two, after it should be done, and you will find precisely the same task awaiting you when you finally do get around to it. But if you put off weeding, or hoeing, or pruning and staking up tomato plants, you will find that this job does not wait for you, but gets bigger and bigger every day it is allowed to remain undone.

Succession Plantings

THE succession plantings should of course, however, not be overlooked, for they make a very big part of the difference between good gardening and poor gardening—it is a very natural thing to go into things heavily on the first planting or two, be flooded with vegetables for a few weeks when they come into bearing, and then, as far as those particular things are concerned, have a famine for the rest of the season. Beets, carrots, lettuce, peas, radishes, and turnips, of the early-planted crops, should all be followed up with later plantings, and beans and corn, especially the former, should be put in in several varieties and plantings to secure a succession until frost. In this way you will increase the efficiency of the garden from a practical point of view, and spread the bearing time of the different kinds of vegetables over as long a period as possible.

Clean Picking Important

ANOTHER way of making sure of having the various garden crops throughout the season is to see to it that no fruits, or seeds, which are not needed for the table are left to ripen on the vines. As far as Nature is concerned the purpose of the plant is to reproduce seeds, and when it has done this its natural course is to die, whether you would like a few more dishes of tender vegetables for the table or not. On the other hand, strangely enough, if you prevent its doing this, it will continue to produce in the attempt to ripen seeds. Keep your plants and vines clean, both of unused product and of injured or decayed portions which may exist.



Entirely apart from the improved appearance of the garden, neatness and care in keeping down the weeds have a positive, tangible value

Use Your Vegetables While Tender

ANOTHER mistake which many gardeners make is in letting their vegetables get too far developed or too ripe before using them. One of the advantages of a home garden is that the various things may be used when at their very best. Radishes should be used when very small. They develop so rapidly that they are in their prime only for a few days—not over a week or so—from each planting. Peas should be taken as soon as they fill out and before there is any sign of their getting hard; beans before the individual seeds begin to attain full size; kohlrabi while still two or three inches in diameter; lettuce before the center of the head begins to "run up," etc.

Watch for the Enemy

THIS is usually about the time when the most serious of the garden's insect enemies open up their warfare in earnest. The potato bug, the rose bug, the currant-worm, and for late tender plants that have just been set out, the cut-worm, will be the most likely to do damage, if you are not watching for them. Arsenate of lead is the best thing to use for potato bugs. If you haven't got that, use Paris green, but you will have to go over the plants oftener with the latter, and there is more danger of injuring the foliage. For the currant-worms use either Paris green or arsenate of lead for the first brood, and if there is another one later after the fruit is formed, use white hellebore, which will be washed off by the rain before the fruit is ready to gather. For the cut-worms use a poison bait composed of bran and a little molasses to sweeten it, and white arsenic, arsenate of lead or Paris green mixed with it. They work at night so that it is best to apply the bait late in the afternoon that there may be no chance of its getting dried up and dusty, as the fresher it is the more readily it will be discovered by the worms. For more particulars as to remedies for other insect enemies as well as fungus diseases, see the article in the preceding number of this magazine on Spraying.

A number of our garden friends who are really beneficial are usually either killed or hunted out, such for instance as the striped garter-snake, the small green or "grass" snake, and toads and frogs. Toads especially are beneficial and their residence in the garden should be encouraged. There is, as far as my experience goes, no truth whatever in the "wart" myth.

EDITORIAL

RETROSPECT AND FORECAST

HOUSE & GARDEN is twelve years old with this issue; not such a great age, but nowadays, at least, an age of majority—or better, a coming of age. Yes, the magazine after a dozen years of development and growth assumes its *toga virilis*. It is now out of the uncertain days of childhood, but not approaching for a long while yet the dried up old age and feeble mindedness which comes to magazines as well as to human beings. And we do not expect such a senectitude, for we believe that in the subjects to which HOUSE & GARDEN is dedicated there is the germ and essence of never-ending youth. To the earnest-hearted man the betterment of house and of garden will have perpetual appeal. Long after he is wearied of the transient attraction of things of temporary moment, he will continue to be interested in making his home more attractive, in perfecting the environment of his family. A truer satisfaction comes to him who has succeeded in creating beautiful surroundings for his domestic life, in producing an atmosphere of charm and simplicity wherein grows an appreciation for the finer things than can ever be attained by the mere amassing of money. Perhaps he has fulfilled his duty to his country in a better way by this accomplishment. We think he has.

Changes have come since that June of 1901. The weakling whose career was so solicitously started by Wilson Eyre and Frank Miles Day is not just the infant he was then. His features have altered somewhat but his heart is the same. Those who fostered his early life have given over their attention to the creation of houses and gardens exemplifying the ideals they taught him to speak, but even though not directly under their guidance, he still tries to be true to his early training.

Perhaps in this retrospective mood the salutatory expression with which HOUSE & GARDEN greeted the world under the direction of Mr. Eyre and Mr. Day might well be quoted. It is as apropos in 1913 as in 1901. The prophecy of a reviving interest in domestic architecture and in more intelligent gardening has been well substantiated. We will try to bear the torch lighted at the time this forecast was made, and keep its brilliancy undimmed.

"The lively interest in gardens that has shown itself in this country within the last few years is but another proof of the truth of Bacon's oft quoted words, 'a man shall ever see, that, when ages grow to civility and elegancy, men come to build stately, sooner than to garden finely; as if gardening were the greater perfection.' The latter half of the eighteenth century was, as far as this country is concerned, the period during which civility and elegancy reached their finest development; and the stately colonial mansion was thought incomplete without a suitable setting of formal gardening. As taste declined with the growing years of the nineteenth century, the reasonable unity between the house and its surroundings, formerly so well considered, fell almost out of sight. If any attempt at it were made it generally resulted in the case of the larger houses, in an expanse of cropped lawn, dotted with crescent or star-shaped flower beds between which and the front gate an Apollo Belvedere made cast-iron eyes across the driveway at a chaste and unresponsive (because equally cast-iron) Diana. As for the smaller house the ideas of the naturalistic school have been inculcated for so many years with such ardor that its owner even to-day can scarcely see the absurdity of treating its half-acre in imitation of a rolling landscape."

"Whether our own age be one of civility and elegancy, it might be profitless to inquire; but certainly, though we have come in many instances to build stately, the art of our gardens has not kept pace with that of our buildings. The thought of the fine garden as the natural accompaniment of the stately house has too seldom presented itself to have been realized in many instances. But now we are by way of changing all that; and though the examples of how the thing ought to be done are still all too few, we are not without them. Just now they are more easily found in connection with houses of great cost than about more modest homes; but signs show that better things are at hand, even where the grounds are small and the amount to be spent very limited."

THE MISCONCEIVED BUNGALOW

IF anyone were sufficiently inspired with the passion for research and classification to desire the most difficult field in which to exploit his accomplishments, we would assign him the labor of classifying bungalows. The undertaking really is more than a task; it is a sentence. Imagine the classification of the "yaller dog;" it is simplicity compared with the work of arranging in classes all sorts of bungalows. Perhaps this is because there is a very hazy idea of what the word bungalow means,—perhaps there is no definite object that the term calls forth; at any rate it is a good catholic field, but a confusing one.

There was a man who accepted an invitation to "our forest bungalow Wald—something or other." He loved the woods, was fond of hunting and looked forward to a glorious time spent in the open wearing a flannel shirt, sleeping on a bed that smelt of balsam. What he found when the six-cylinder whirled him through the stone gates over about ten miles of smooth, broad road that should have entitled its engineer and constructor to perpetual honors, was a fine Colonial house. The forest was there; big trees, suggestions of soft, swampy land near the lake outlet, tumbling streams in rocky gorges,—all ideal, but when he looked at the white symmetrical building, walked over its red tile porch or noted the shadows from the graceful, Corinthian capitals, he lost heart. He didn't hunt, he didn't fish. He chose the one respectable suit in his wardrobe, donned tennis shoes and claimed he was too tired to move from the veranda. He had the awful fear that he might shoot a buck if he went out, and then discover upon the body a beribboned collar engraved in Spencerian script with the name Rollo.

The fault that suggests itself to us lies not in the interpretation of what a bungalow shall be, nor in the immense variety of buildings bearing the name. The mistake is to build any summer home in a type of architecture chosen merely for its attractiveness, call it a bungalow and dedicate it to uses utterly foreign to its purposes, or place it where it is so blatantly out of harmony that it casts an artificial light over its surroundings. This tendency on the part of individuals is part of the cross architects carry.

On the other hand the bungalow, that is, any form of summer home given over to informal uses and placed in a natural or wild and rugged situation, is not given the attention of architects in general. Probably this is because it may not be a flexible subject on which to work. In another part of this magazine is mentioned what certain Scandinavian architects are doing with a type of summer house. It seemed to us that it showed two things: one, the potentiality of elementary building forms for architectural treatment; the other, a way of meeting the summer house problem in a manner pleasing and most fitting to certain large sections of this country.

The first suggestion need not be limited to the log house. In the West it would apply equally as well to the type of building that the Spanish missionaries erected following the lines of the native adobe structures which they found. In the East the same is true of certain Colonial forms. But if you choose the pleasure of reviving original styles, see that they are in the right atmosphere and do not equip them with the interior accommodations demanded by the most complex society. Such a course is as artificial and deceptive as that pursued by the owner of Wald—something or other.

"Daffodils, that come before the Swallow dares"



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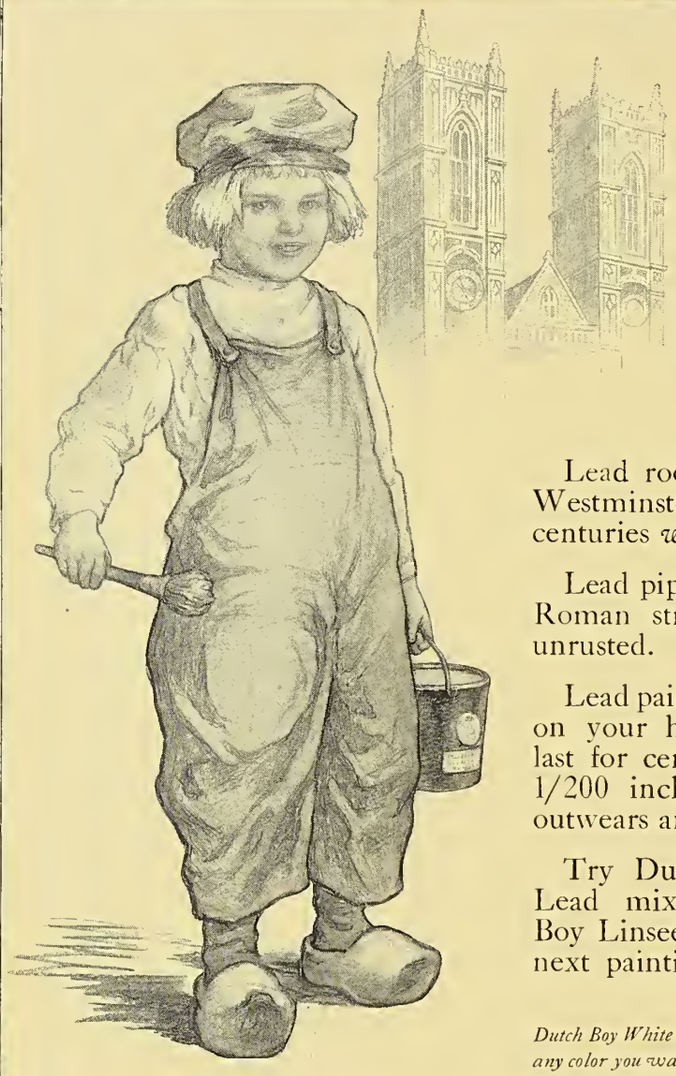
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Attracting the Wild Birds

(*Continued from page* 461)

the Baron von Berlepsch who developed it in Germany. After twenty years devoted to the study of bird habits, the baron devised a type of nesting box which the birds would really deign to use. The average man supposes that any sort of box stuck up in a tree will be welcomed with joyful appreciation. In point of fact, most birds will pay but scant attention to such contrivances. The English sparrow may appropriate them, but this breed needs no coaxing. Wrens are sometimes tempted, too, but the average box will be taken possession of by the squirrels, if the sparrows do not get it first.

Baron von Berlepsch made a point of examining the nests made by woodpeckers, sometimes having the trees split open, so that he might study the interior construction of the nests, and after a time was struck with the marked similarity of them all. Then it occurred to him to make an imitation woodpecker's nest, knowing that other birds beside the builders eventually find shelter in the nests which the woodpeckers laboriously construct. It was found that the opening was always round and inclined at such an angle that the rain could not beat in; also, that the lower part inside was shaped like a bottle and that fine shavings were used for the eggs to rest upon. Von Berlepsch proceeded with infinite pains to duplicate these nests of the woodpeckers, and boxes similar to the two shown in the illustrations were the result.

Mr. Kennard scattered the boxes all through the woods and the apple orchard. Some were occupied very promptly the first year. Others found tenants the year after. Still others have been usurped by squirrels, while a few seem to have been altogether neglected. The number of species which have habits such as would lead them to nest in boxes of this character is, in this part of the country, only about ten, and include screech owls, woodpeckers of several kinds, great-crested flycatchers, tree swallows, blue birds, chickadees, nuthatches and house wrens, and, perhaps, in some locations, sparrow hawks.

No little care in putting up these boxes is necessary. If not hung absolutely vertically, the top must incline in the direction of the opening rather than the other way, or water will enter; and the boxes must not wabble.

The imported boxes have covers which are screwed in place, but those now being made in this country have their covers hinged and fitted with thumb nuts, which is a valuable improvement. There are three types of boxes made, vertical, horizontal and one, a cup-shaped affair, with open sides. Openings of different sizes to accommodate different species of birds may be provided. People not familiar with feathered life are amazed when they learn how exceedingly particular the birds are about every detail of their homes.

Complete records may be advantageously kept of each nest and its occupants, numbered tags being attached to the base of each supporting tree. Then you can make a personal inspection of every nest at least twice each year, so that you may know just what is going on; and it is quite an undertaking, too, for in many instances a long ladder must be used. When this work is under way, the value of the hinged covers is quickly realized.

It has been found that the red squirrels do no little damage and it is certain that they drive many birds from the nests. The gray squirrels, too, are not above suspicion, but they are so attractive that one dislikes to wage war on them. It is useless, though, to encourage the birds unless stern measures are taken with the redcoats. There is hardly a box on the Kennard place which does not show marks of squirrel teeth around the openings, and in some instances, the squirrels have taken possession. Several boxes are occupied by families of flying squirrels which are not disturbed.

English sparrows are naturally a great nuisance, but have been pursued so persistently that they are uncommon now. Blue jays have been given a bad name in some sections, but several pairs, which are frequently seen and which breed among the pines, appear to do no damage here. Some bird observers report that jays will spend hours in searching out the broods of other birds and ruthlessly destroying them. The jays on this place seem to be better behaved.

It is sad about the screech owls. Very friendly birds they seem, for they come close to the open windows at night and are not unwelcome company. Doubtless, they earn their living by killing mice; yet their depredations are undeniable. The evidence is found in their nests lined with the feathers of other and weaker birds.

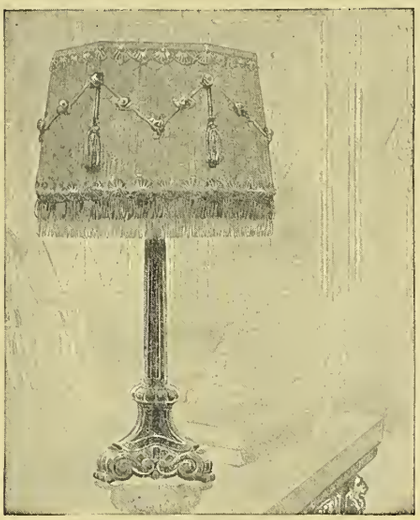
Among the birds which come close around the house are the robins, scarlet tanagers, kingbirds, the golden-winged woodpecker, the song and the chipping sparrows, purple finches and catbirds, while occasionally glimpses are caught of chewinks, and oven-birds. Phœbes build in the front porch and swifts in the chimneys.

An Attractive Western Bungalow of Low Cost

(*Continued from page* 463)

very substantial looking and fully in keeping with the rest of the porch.

The cottage foundation, again of alder logs, completes the rustic effect. The logs are put together log cabin fashion to a height of four feet. We stained the house brown with a bricky red roof which combined with the silvery gray of the alder bark goes to make a very cozy looking habitation for lovers of woodland freedom.



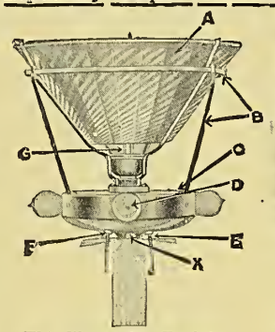
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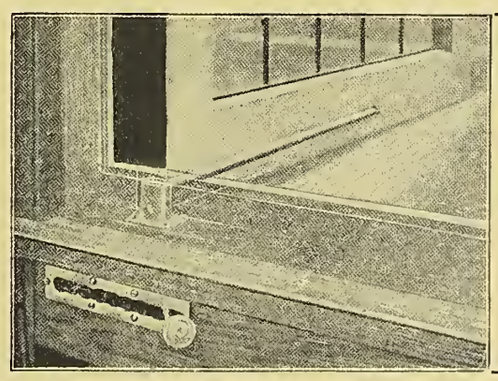
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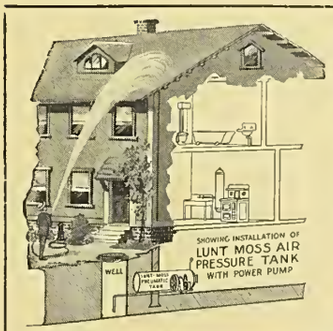
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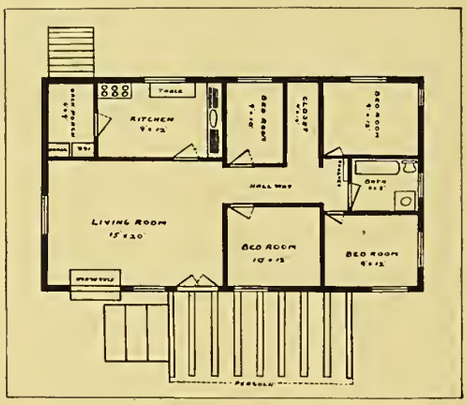
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The exterior is suggestive of the inner livableness. The living-room is entered from the porch through two large French doors. It is 15 x 20 feet with a big fireplace built of the common red brick used in the chimney, faced up to mantel height, a built-in seat allowing a comfortable survey of the fire, and large windows on the two sides showing a panorama of continuous Sound traffic.

The four bedrooms are large enough for two beds in each and have built-in bureaus. The partitions are made of matched ceiling instead of using the regular 2 x 4 supports. This gives a good finish, is cheaper, and as strong as necessary. We used stock sliding windows in the bedrooms which give the effect of casement windows.



The bathroom is complete with first-class plumbing. We piped a spring into the house, giving a sufficient supply of water for all household purposes.

The community closet is a small room in itself, lighted by a high window under which is a row of shelves. Poles running lengthwise, besides side hooks give plenty of room for a large family's wardrobe. There is a built-in cupboard for linen at the end of the hall.

Plumbing is also complete in the kitchen. The entire wall above and below the sink is built into cupboards, which serve as pantry room for all dishes, pots and pans. The back porch has a built-in woodbox, icebox and long bench for Monday morning washtubs.

With the roof complete over our heads we turned to outside adornments such as gardens, window boxes and paths. Each window has its bower of feathery ferns transplanted from nearby woods. Climbing roses and ivies are well started in their efforts to cover the house, and we have a suggestion of green which some day may be recognizable as a lawn, without being labeled.

The satisfaction gained from such a place cannot be exaggerated. After a thorough acquaintance with gasoline "don'ts" and "ought to's," the boat redeemed itself and was quite as satisfactory as the house. If you want a high rate of interest on a small amount of money, put up a rough house in the woods

on some body of water, take a vacation and collect the interest in good times. It makes good red blood with which to meet the winter blasts, bring freckles instead of wrinkles, and creates an optimism with which to face the coal bill.

A Woods Bungalow With City Conveniences

(*Continued from page 462*)

sized chest, a cabinet with eight drawers, twenty-four feet of shelving and innumerable clothes hooks. All these things are economical luxuries and luxurious economies.

The back porch was planned and furnished with a view to saving many trips to the cellar, thus keeping the daily tasks on one floor and furthering the city flat idea. Containing sixty feet of shelving, it provides a useful overflow for the kitchen end of the house.

The reception hall was especially planned to insure privacy in the living-room and to avoid the abrupt entrance from the porch, so frequently seen in plans for bungalows.

The central hall, besides providing a place into which every room door can open, thus saving doors between the rooms, makes a comfortable and convenient sitting-room for cold or stormy evenings, as snug as any city flat.

Although porches do not concern those who plan city apartments, ours is a feature of the place. The straight line of the roof was not disturbed by the addition of any piazza roof; instead the front door was set back four feet, making space on the side walls for two small square windows which supply acceptable light in two rooms, and one of which is used as a serving window when meals are eaten on the porch. Together with the unroofed part, this porch covers a space equal to a room ten feet square. The outer side and one end are finished with a built-in seat, long enough to accommodate nine or ten persons. The recessed arrangement for door and windows is a noticeable protection when the weather is cold, rainy or windy.

The dining-room contains a large built-in dresser, with shelving and closets from floor to ceiling from which two additional doors open on the kitchen side. The irregular part of the dining-room forms an alcove, which is curtained off and used to keep some of the less ornamental articles that are in constant use. A home-made rolling table saves many steps at meal time, and is also very useful in house-cleaning season.

Light was let into the central hall, which would otherwise be dark when all the doors are closed, by replacing some of the horizontal door panels with panes of glass at a cost of seventy-five cents a panel.



Residence of Ralph Peters, Esq., President L. I. R. R. Co.
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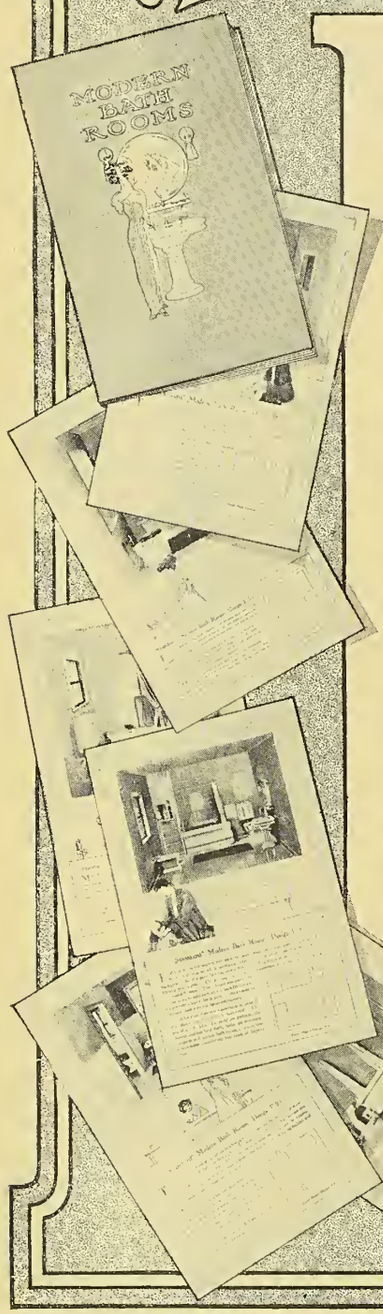


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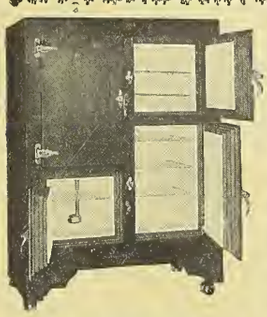
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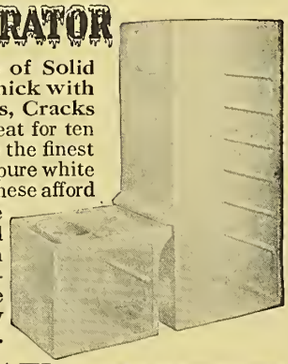
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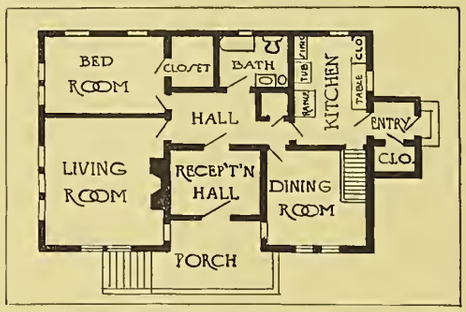
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The coloring of the bungalow furnishings is almost entirely dull blues and greens, chosen for the cool and restful effect and because, in so small a house, a variety of colors would be sure to clash.

The original slope of the land was preserved, not only saving the expense of cutting and filling, but leaving natural and attractive grounds, in place of the painfully raw appearance that usually follows the builder's operations. Plans for a heating apparatus in the cellar were discarded in favor of stoves, in case of the house being occupied all winter. To provide for these a stove hole was cut in the hall, and an upright galvanized iron sheet constructed by the tinner to fit in the open fireplace during the stove season. The boiler, usually given a place by the kitchen range, where there is already too great a supply of heat, was put on the opposite



side of the partition wall, where its heat could contribute to the comfort of the bathroom in chilly weather. A portable oil heater is always at hand for use in any of the rooms. These heating arrangements saved expense in constructing the bungalow and are also very economical of fuel. Oil is used in hot weather for cooking. Gas, electricity, and city water have not reached us yet; the plumbing is supplied by cistern and tank in attic, with a pump in the kitchen. Another saving was effected by having some of the closets open in two rooms. A single porcelain tub and a washing machine cost less than two tubs, and do the work better; besides, the space in a small kitchen is more valuable than another tub; the machine, being portable, is stored in another room except when needed. A built-in kitchen table, measuring two by six is closed in below and fitted with doors, making the handiest kind of a closet and utilizing space that generally goes to waste. Expense was avoided by having the woodwork of cypress, with the plainest possible finish. Windows were all chosen from stock sizes, saving the cost of making to order. Shutters were unnecessary because of the shade provided by the trees. An outside cellar door was not considered to be of enough importance to pay for the cost; to serve the same purpose the inside door to the cellar stairs was placed directly beside the door opening into the back porch. Simple, unbroken lines in roof, walls and partition, saved expense both inside and outside the house also adding much to the restful effect of the place.

Many economies are permissible in a bungalow that would be out of place in a more pretentious house, even impossible in a city apartment. For this reason we were able to furnish the place comfortably for little outlay. Bungalow life is the simple life, and expensive or elaborate articles of furniture are fortunately in very bad taste. Baskets and boxes of various sizes were given a coat of paint and served the purpose of many higher priced receptacles. Doors and window bases, in the more practical rooms, were fitted with hooks or rods and used for many necessary articles. Folding tables and folding chairs saved both expense and space. All furnishings were planned to avoid heavy work in cleaning. Casters were placed on furniture wherever practical. Bookcases of the sectional variety were chosen, rugs are all of light weight. No unnecessary ornaments or other articles are kept in sight. A cheap laundry table, of the type that forms a settee when the top is turned back, is painted to match the other furniture and takes the place of a more expensive article.

Objections might be urged against the bungalow style of house, that as the rooms are all on the ground floor, there is little privacy within, and that the windows are too much exposed to passers-by. As to the first, we found that a three-fold screen, with thin curtains, gave privacy to the bedroom without shutting off light or ventilation. If a sloping plot of ground can be selected, as in our case, many of the windows are practically as on a second floor, and escape exposure to the public eye and too great convenience for sneak thieves. These facts, together with the good drainage provided by a side hill, the superior view and better ventilation, are points most emphatically in favor of hill country as an ideal site for bungalow building.



The Railroad Tie House

(*Continued from page* 473)

the house in a veritable bower of color.

From the stone steps, descending from the pergola we reached the upper terrace, sixty or seventy feet long, with a flower bed running its entire length. From this upper terrace two flights of stone steps flanked by stone pillars led you to the lower terrace, where another flower bed, some fifteen feet in width and as long as the terrace, is always a glow of beauty with its ever-flowering plants. These plants are so arranged that each row, blossoming at a different time, gives a perpetual bloom from the first spring flower —the wonderful iris. Following these is a constant succession, until the last and one of the most beautiful—the chrysanthemum—blends its flowers with the ever-changing fall foliage.

Few if any of the trees were removed; everything was kept as nature had placed

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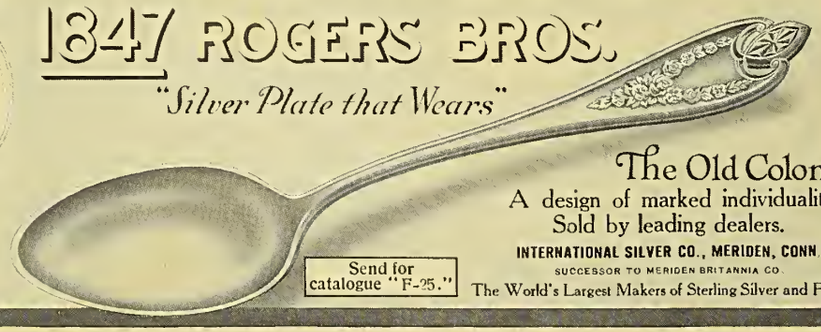
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it, our belief being that nature is the most skilled landscape architect. Thus there was no expense for exotic trees, no expense for these particular freaks of nature produced by the hothouse, no expense for flowers that were not hardy, that could not be found in their native location year after year.

The wild flowers were even made to add their touch to the general composition. From the neighboring fields beautiful clusters were brought to add to the color harmony. Again, there was no change made in land levels—no excavation, no grading, no attempt to turn this fine old pasture land where nature had established from year to year the proper grading into some pale reflection of southern Italy, or the gardens of Imperial Rome.

Later, just over the western knoll and out of sight of the house, was established the kitchen garden. And even this had its flowers and was arranged to adapt itself to the general lines of color composition.

Thus from the very start, the question of economy of expenditure went hand in hand with our desire for a simple yet beautiful home, and we found nothing antagonistic in either of these propositions.

The little home even when first completed looked as if it had always been there. Its stone walls were the stones of the fields, its timber the trees of the forest, its cement made from the local sand; little or nothing in its entire construction came from foreign lands, and this has made it noteworthy.

For months the neighbors came in streams to visit this unique achievement; artists have painted it; poets and authors have written of it, and even today those who come to the village are asked if they have seen this little home.

And perhaps the best tribute ever paid to it was that of the head carpenter who had known us from early childhood, when he said, "It did not look for much when it started, but my! now it's fine." And when the last man had packed his tools and with a friendly good-bye left us, its cost was the cost of the workingman's cottage—fifteen hundred dollars!



Roses and Their Garden Culture

(*Continued from page* 470)

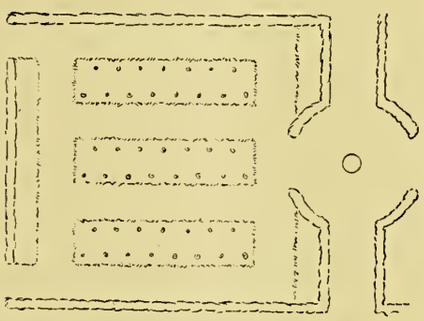
about three feet. Then draw the earth up around each plant in hills, and fill all the space between these hills with manure. Bend the plants down and cover the entire bed, plants and all, with straw or loose leaves, covering last of all with some branches, to anchor these. It is an excellent plan to put the straw on somewhat in the form of a thatch to shed water. Do not apply any of this protective material, however, until actually cold, freezing weather has arrived.

For the first choice among the hybrid perpetuals I think we may put Frau Karl

Druschki, a white rose, exquisite in form, very strong-growing and free-blooming. It is a comparatively modern rose, but its position in the rose world is absolutely established. Next to this is the lovely old Jack rose, rich and dark and velvety, and deliciously fragrant. There are possibly lovelier red roses than this, roses that are fuller and larger, but I do not believe that anything will ever take the place of the General Jacqueminot. Third of the hybrid perpetuals is Paul Neyron, a rose of the true rose color, deep and clear, with huge flowers and many of them.

Of the hybrid teas there is the lovely, cream Kaiserin Augusta Victoria; the pink Killarney, which no one could think of omitting; Madam Ravary, which has flowers of gorgeous yellow; Madam Caroline Testout, a salmon pink, and the Viscountess Folkestone, which is a delicate, creamy pink.

Then for the teas choose William R. Smith, which is a blush rose; Lady Hillingdon, apricot yellow; Maman Cochet, a light pink, and Marie Van Houtte, which is neither yellow nor white, but a little of both.



Beds forty-eight inches wide admit of two rows placed zigzag

In addition to these twelve I know of no better selection than any one may make by selecting from a good rose-grower's catalogue. Roses are as much a matter of taste and color preference as neckties and gowns, and the descriptions which are given of them now by all first-class houses are such that it is hardly necessary to advise concerning them. The Canadian Department of Agriculture recommends the following as most hardy of the perpetuals: Frau Karl Druschki, Magna Charta, General Jacqueminot, Mrs. John Laing, Ulrich Brunner, Baronne de Bonstetten, Mrs. R. G. Sharmon-Crawford, Madame Plantier, Madame Joly, John Hopper, Prince Camille de Rohan, and Pierre Notting. But I should not feel it necessary to confine a choice to these, however severe the climate where the garden was to be made. For, as I have already said, every rose in the garden should be given protection for the best results.

With the resolution to plant a rose garden, which should precede the purchase of a single bush, the resolution to care for the plants with the most unswerving loyalty should also be made. Healthy roses are not to be had, one may almost certainly



Don't be a slave to your stairs

Up and down, down and up, always on the go—no wonder night finds you all worn out! "That's woman's work," you say. Yes, but you can make it easier—you can do away with nine-tenths of this tiresome stair climbing.

Just get that husband of yours to put in two of these Inter-phones—one upstairs in your bedroom or hall and one in the kitchen or wherever you please.

Western-Electric Inter-phones

Then, by simply pushing a button, you can Inter-phone your instructions and thus manage your home in the same easy, systematic way that your husband manages his business.

Two Inter-phones like these will cost less than $15, including wire, batteries, etc. As easy to put up as a door bell, and cost no more to use. If your dealer cannot supply you, we will.

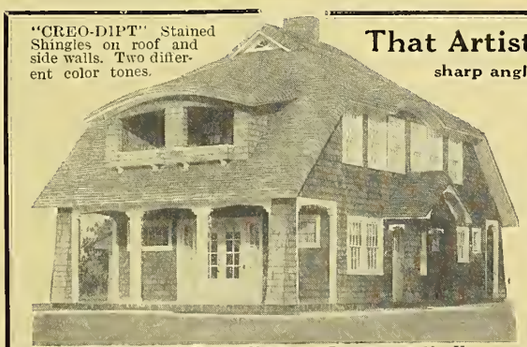
Write for illustrated booklet No. 25-A, "The Way of Convenience," and convince yourself.

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If You Want Summer Time in the Winter Time Build Your Greenhouse Now

WHEN the roses are blooming in June, it is so easy to forget the dull, dreary months of wind and rain and snow. Summer in all its beauty seems never ending—until some chill evening your neighbor comes along and says: "Feels like frost; better cover up your plants."

Then it is that we receive numerous letters asking us to: "Come at once and see about building a greenhouse"; or letters urging us to "Hurry up with my house, we simply must have it completed at once."

Of course, we do all we can: but it's hardly fair to expect us to do in a few days what it requires weeks to do, as it should be done.

The truth is, if you want your greenhouse ready so your flowers will be blooming freely for Thanksgiving Day and melons ripe for Christmas, you ought to get started at once.

The quickest way would be to send for one of our representatives and go right into the matter from A to Z.

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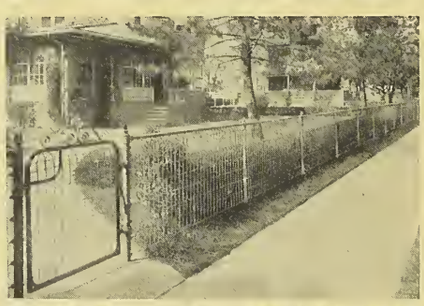
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say, without the "ounce of prevention" treatment. But with this sort of treatment, disease will never appear among them at all, nor will insects be troublesome. Bordeaux mixture applied every week is a preventive of all fungous diseases—and these are the diseases which must be *prevented,* for they cannot be cured, once the spores have entered the tissues of the plant. Aphids will undoubtedly make their appearance, but a spray of soapsuds or of tobacco tea, made by steeping tobacco stems until the concoction looks like strong tea, will effectually dispose of them, provided the work is done regularly and immediately upon the appearance of even one of these insects. Worms of any kind should be poisoned by poisoned foliage. Hellebore is the best for this, put on after sprinkling or early in the morning while the dew is on the plant, either with a bellows or with a sifter. The rose bug is the one trouble which we cannot cure, so must, in a measure, endure. It usually goes to the lightest colored flowers, consequently many gardeners entice it away from roses by the use, near them, of something like spiræa, which blossoms at the time these bugs appear and will thus attract them. If the bugs are allowed to remain on the plants they will eat them up completely in summers when they are very plentiful. It is usually supposed that only hand picking avails against them, but I am told that a spray of wood alcohol is effective and will not injure the flowers. I have never tried this myself, so cannot vouch for it, but if the bugs make their appearance in any numbers this summer, I certainly shall test it. The spray must be very fine, but it will not injure the plant owing to the fact that the moisture deposited evaporates very quickly. Be careful not to inhale it, for it is said to affect the eyesight if breathed.

Standard roses are for the advanced class rose growers rather than for the beginner. The combination of these with peonies as shown in the illustration is a sight never to be forgotten, and where space permits and the real rose obsession has become well developed, by all means have a few of these plants handled in some such way.

Rose arches and arbors are possible where no rose garden is attempted. Among climbing roses the most desirable are the Wichuriana hybrids. The foliage of these suffers very little from the attack of insects, and they bloom abundantly as well. Dorothy Perkins is perhaps the best known and best loved, of an exquisite pink and really fragrant. Hiawatha, which is a single rose, is very beautiful, and the white Dorothy Perkins likewise is particularly fine. Lady Gay is a pink climber that sometimes has even better flowers than the Dorothy Perkins, although very often the two are said to be identical. These are all hardy. Several varieties of hybrid climbing teas are offered, but these are not hardy. If you do not mind the trouble of taking them down in the winter and of covering them with earth, there is no reason why they should not be grown. Crimson rambler, although lovely, I do not

advise nor plant because of its very unattractive foliage after the blooming period is over. This is a polyantha hybrid, and generally it is well to avoid these.



Building the Poultry Quarters

(*Continued from page* 483)

best traditions — or superstitions — face this building to the south. The south front is full of windows reaching nearly to the floor, so that as much sun as possible may fall upon the pen floor. A passageway from which the pens are entered is placed at the north, and the north wall has few if any openings in it, so that it may afford perfect protection in winter. For a winter house only, this may do very well, but for the summer a more uncomfortable building could scarcely be designed. There is no possibility of ventilating it, or of allowing a cooling draught of air to blow through it. As has been pointed out before, the important thing, in our climate at least, is to provide a cool building in summer. It is a simple matter to get heat in winter, but it is a very difficult one to devise a building which will be cool on a warm day. A much better disposition of the chicken house would be to run it north and south, as advocated for the cow barn, with large windows and doors on both sides and with chicken yards on each side. Then it would be possible to retain one yard and plant it with suitable crops while the other one was in use. To have two chicken yards that are interchangeable is a great advantage, as the continual use of one causes it to become foul and infected with the germs that are harmful to chicken life. This plan, however, has one disadvantage, as it does away with the passageway behind the pens, although the only use of this is to allow the owner an easy inspection of his fowl. It is not at all necessary, however, for the care of the birds themselves, and apart from the owner's comfort, this additional space had better be given over to the flock. What is of great importance for the chicken house is a dry location. Dampness must be avoided, not only in the building but out of it, and elevated and well drained ground for the site of the chicken house is of prime importance.

In spite of the general use of concrete for the floor, this is not desirable except as a means of keeping out the rats. The floor of the pen itself is best of wood, elevated above the concrete floor, 18 in. or 2 ft. This gives a circulation of air beneath the pen and affords sufficient space to allow a dog to catch any rat seeking shelter there. Such floors are drier than any other type.

All the doors in the pens and yards should be of the double-swing variety, the same hinge being used as that for a butler's pantry door; this hinge permits the

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Its 10 per cent. oversize, with the average car, adds 25 per cent. to the tire mileage.

These two features together have saved tire users a good many million dollars.

Also This

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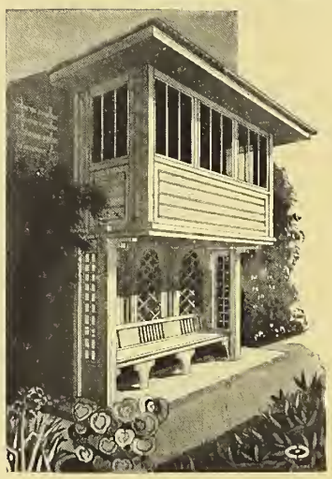
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door to be pushed open from either side and when released to immediately swing back into position. Doors 2 ft. wide and 6 ft. high are large enough for the average problem. The windows should be numerous on all sides, and blinds, like those usually prescribed for the cow barn, are desirable during the summer. The protection of the fowl in winter by dropping a curtain enclosing the roosts is a good thing, but a little heat throughout the entire house is probably better, though this should mean more ventilation, not less. In the killing-room a dozen small coops are placed in which to confine the chickens preparatory to that operation. All roosts, nests, etc., should be removable for easy cleaning. All dust projections should be eliminated, and the old-fashioned whitewash for interior finish is as good as anything. The plans of the Brokaw chicken house were designed to meet, if possible, all objections. Skylights were put in the southern slope of the roof to give additional sunshine in the pens in the winter and also to afford better ventilation at all times. In the front of each pen is a door 2 ft. 4 in. wide, the remaining space being taken up by a large window; the sash, divided in the center, is arranged to open in half or entire. By this means the chicken house may be readily converted into the "Open Front" type—from all accounts a very good one. By closing all the windows and doors, it may be made at once into the tightest kind of a "Tight Front" type—from all accounts a very bad one, but still desired by some. The north wall is well ventilated by good-sized windows, which should be left open throughout the summer, though they seldom are. The usual manner of arranging the roosts and nests is shown in the center of page 483, the nests and the dropping-boards being accessible from the passageway. Below it is a photograph of the interior.

For the small plant the commercial outdoor brooder is the best. For the larger scheme the brooder building is a satisfactory structure, and the plan shown at the top (right) of page 483 illustrates the usual type. The important thing in the brooder house is to separate completely the cellar for the incubators from the cellar in which is placed the boiler. It is impossible to prevent the coal gas escaping from the boiler and the fumes of imperfect combustion are harmful to the hatching egg. An independent, well-ventilated cellar, which shall have no entrance except through the outside air, must be provided for the incubators. In the plan, this cellar is under the end of the building. The store room is a very desirable room to be had in connection with either the chicken or brooder house. In connection with the chicken houses at Skylands, a separate storage shed has been provided. For the chicken farm a good-sized storage place is necessary for outdoor brooders and hovers which are out of season, to say nothing of extra coops and shipping-boxes and that inevitable accumulation of things which

though hardly fit for use seem yet too valuable to be thrown away. Such a building at once protects them from the weather and keeps them out of sight.

Laying Out the Flower Garden

THE initial step toward laying out a flower garden is to make up your mind not as to the kind that you want but the kind that you ought to have. Although this sounds heart-breaking, it is not so bad after all; it is only a matter of adjusting the mental attitude.

Of course, the kind of garden that you ought to have is the one that is best in the circumstances. In the first place, as has already been said, it should bear a relationship to the house. This does not mean that a house wholly impossible, or only half-way bad, ought to have those qualities duplicated in the garden; nothing could be more senseless than that. It does mean that there should be a certain harmony, if not actual correspondence, of character. True, there might easily be the sort of planning that would so violate the garden as to shut it out completely from any picture of the house. This would satisfy the passerby and your neighbor; but how about you? Do you not want to feel that there is a certain homogeneity of atmosphere? Well, you ought to if you do not. If the house is not right architecturally, strive to conceal its defects by beginning the garden there, so to speak. Sometimes a single vine or a few shrubs or evergreens will chasten architecture wonderfully, and at the same time serve to bridge the house with the garden.

An Italian villa would better have an Italian garden, a Georgian house a formal design of the English type, a rambling farmhouse an old-fashioned layout of no set form, a house built on rocky ground a rock garden, and so on. This is speaking broadly; in actual practice, so far as the average place of moderate size is concerned, the idea is not so much a garden that is technically accurate for its class as one that in its lines, or some distinguishing feature, suggests that class. Nor, as has previously been said, is there any need of its going by this, that or the other name; it may have a dominant Italian note in the broad view, as seen with the house, but at close range reveal such a variety of adapted touches that it can be called only the garden.

There is no occasion to fear that this limitation of plans will be a serious barrier to the expression of individual preference; the combinations that can be worked out are endless. The real limitations enter when decision must further depend on climate, soil, exposure to sun and wind and whether the house is occupied at all seasons, not to mention the matter of time. All these things must be considered, and considered well.

Time, that is to say the amount of leis-



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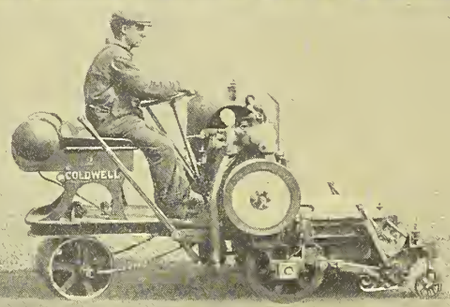


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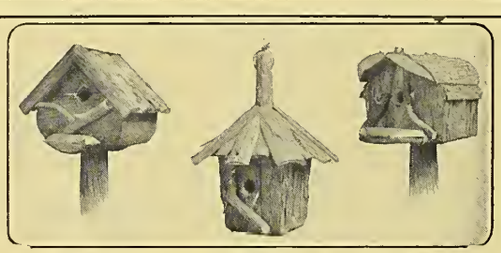
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ure at one's disposal, is of the utmost importance. It takes time not only to make a garden, but to maintain and enjoy it. The moment that the garden uses up more time than can be given to it comfortably, it gets beyond its province—play becomes work. And a flower garden is no place for drudgery. Figure out then how much time you can spend, comfortably, not merely during the season just in sight but for at least a few years to come; and cut your garden cloth accordingly.

Climate is safely disposed of only by the elimination of all but the really dependable flowers, remembering always that in some places hot, dry summers are as much of a problem as severely cold winters in others. Soil disadvantages can be remedied wherever expense does not stand in the way. Winds and the force of the summer sun are broken by the planting of shrubs and vines. Little or no sun is harder to get around, though the last resort of a shady garden is far from being one to be altogether deplored; sometimes such a garden is a place of genuine delight.

All this figuring out what is best to be done is prime mental sport for long winter evenings. Those are rare times for the planning of gardens—when the fire burns bright and you can sit and think, devise and revise, with the comfortable feeling that spring is still well in the future—that there will be no call to dig on the morrow.

Hurry, indeed, is the last thing to enter into the planning of the garden. Much has to be thought out, and thought out means threshed out until there is a clean winnowing of the impractical from the practical.

Preliminaries out of the way, the paper stage of the game passes from memoranda into the definite form of a plan to scale. Blessings on the man who invented cross-ruled paper; with it laying out a garden is child's play, even for the unmathematical mind. This paper comes in sheets 17 x 14 in., and is ruled in little squares that run thirty-six to the square inch. The squares may be called any convenient unit from a square foot up, and if one sheet of paper is not large enough, two or more may be pasted together.

With a steel tape, if you can get hold of one, take measurements of the boundaries of the entire home grounds and the base lines of the house and any other buildings. Then get the distance of the house from the boundaries and locate by further measurements all existing roads, paths, trees, shrubs and borders. Having decided on your unit, transfer these measurements to the cross-ruled sheet and you have a plan of the place all ready for laying out the garden by exact scale. This plan would better settle only the location and size of the garden.

A large plan of the garden in detail should then go on a separate sheet, this to be a working scheme for planting. Here it will sometimes be found very convenient to call every six squares each way a

yard, which gives plenty of space for numbers or other designations.

All borders should be not less than four feet in width; six is better, and they may be run up to ten or twelve feet if there is access from both sides. Three feet is a good average width for a path, but if growth is eventually to fall over both sides allow another foot.

Straight lines depend largely upon the amount of formality that is to enter into the plan. Sometimes, however, they are considered as the means of saving work. Every variation from straight lines calls for more labor of maintenance, as well as construction, and the same is true of the multiplicity of beds and borders in a layout. The time to think of both things is when the paper plan is taking shape.

At this point, too, it should be borne in mind that laying out a garden does not necessarily imply that you are binding yourself to do all the work designated before the next summer has flown. As a matter of fact, in the case of any layout of size or one of complexity, the better way is to make only a start the first year. If, as is again and again the case, the start is a wrong one, it will be the more quickly remedied.

Suppose the garden scheme to be a bordered path leading down to a parterre plot. Plant only the path border the first spring and let the remainder simmer until autumn—when it can be made ready for planting the following year. This is not altogether a question of dividing the labor, though that is important enough; you learn a lot as you proceed with the work, and the final shaping of the plan will be easier as well as more satisfactory for the experience. If it is convenient to make ready the parterre plot the first spring, fill it up with annuals as a temporary measure.

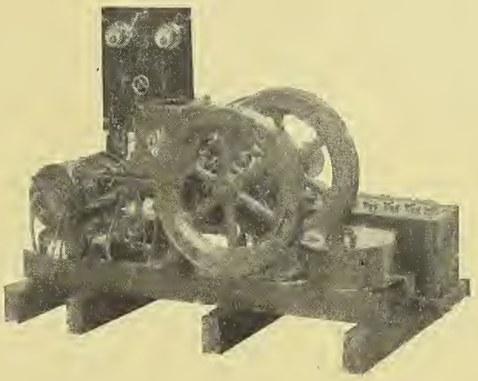
Greater restraint than this may be exercised, and it is good advice to follow where pretty nearly everything is to be learned about plants—color value, foliage effect, manner of growth, hardiness in a given locality and the season and duration of bloom. These things are best learned by doing all the initial planting in some out-of-the-way place like one end of the vegetable garden. Lay out long beds about six feet wide and grow your flowers there for a season, or even two or three—until you feel competent to handle them with intelligence. Plant in transverse rows, wide enough apart to use a hoe, where rapid increase of hardy stock is desired and in small groups to experiment as to color combinations and other effects. It takes courage and patience to do this, but it pays in the end.

These are more thoughts for winter evenings. Meanwhile the paper plan is only an outline of boundaries. The filling in of the details is simple or complex according to the variety of plants used and the character of the color scheme.

Apply a thin wash of water color to the sections devoted to the different plants before the letters and numbers are put on;

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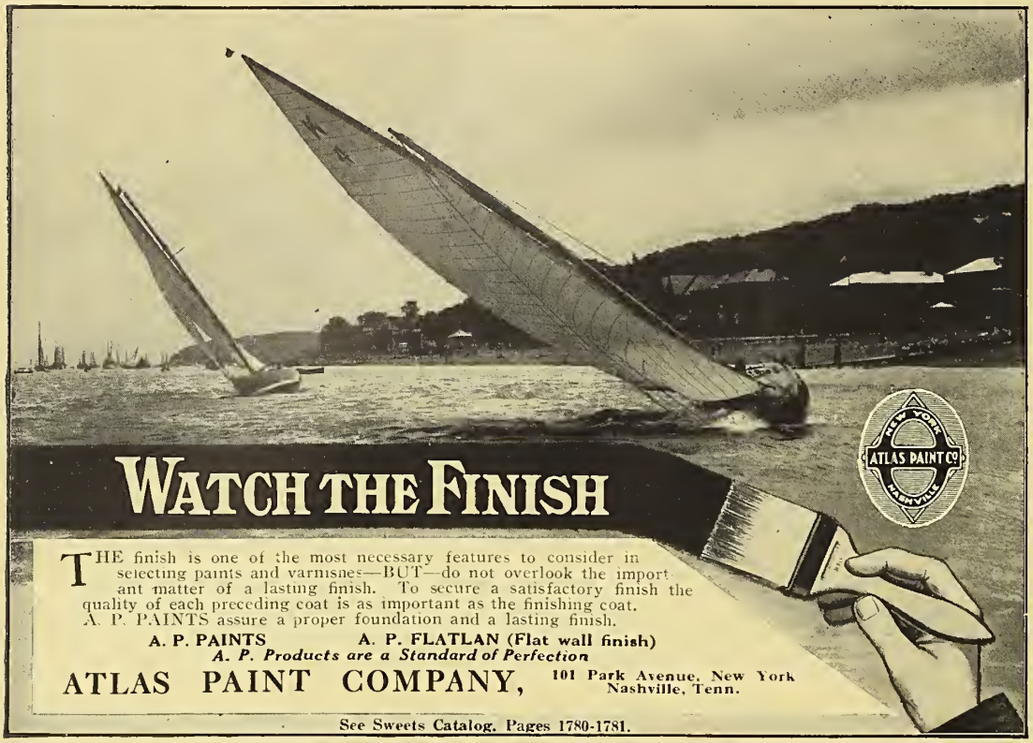
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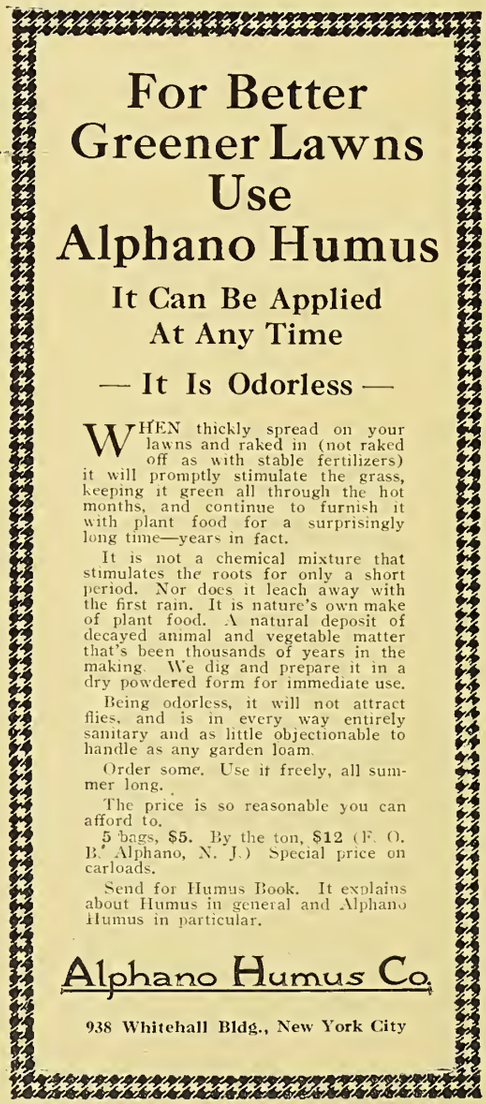
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the indication will be all the clearer. In the final stage it is advisable to color the entire plan, using green for all grass plots and brown, gray or brick color for the paths, according to the material.

Catalogues begin to come along in January; so that these may be gone through and the selection of plants and seeds made as the work of planning progresses. Early decision and early placing of orders is wise; you get the pick of the stock, which sometimes runs out altogether before the late-comers have been heard from. There is no danger that early orders will be shipped too soon; they merely take precedence. H. S. ADAMS

Lawn-Soils and Lawns

AT THE time of the year when the residents of the cities and suburbs are looking at their lawns with a view of repairing them for the winter and summer months, it is well to examine the soil to a depth of from twelve to twenty-four inches to see if there are any bricks, tin cans, boards and other coarse building debris. The Bureau of Soils, United States Department of Agriculture, says in a Farmers' Bulletin that the reason that grass does not thrive well on the average city lawn is that the majority of them have a filler of this kind of rubbish, and of course, grass will not grow on such unfertile material.

"A lawn is the accompaniment of every effort on the part of man to beautify the surroundings of his abiding place," says the bulletin. "The great increase of interest in suburban and rural life has caused a corresponding increase of interest in matters pertaining to the making and maintenance of lawns. Suburban railways, the extension of electric lines into the country, and the return of man to natural ways of living are all factors contributing to the growing interest in matters pertaining to lawn making.

"In general a lawn should be beautiful, and it should be useful. Its beauty depends upon the contour of the land, the color and texture of the grass and the uniformity of the turf. The use of the lawn is to provide a suitable setting for architectural adornment and landscape planting. Every device should be employed when working with small areas of ground to give the lawn as great extent as possible. The buildings should be well back, the foundation not too high, and the grading of the ground should be slightly convex—that is, a gently convex, rolling surface from the base of the foundation to the street line, rather than concave.

"Bricks, flat tins, boards and other coarse building debris found in nearly all small lawns in the city are very detrimental to the proper movement of soil fluid. The downward movement of water is not seriously impeded by such materials; it is

probably facilitated. The moisture moves downward until it encounters a brick, for instance, at a distance of three or four inches below the soil level. The water meets with no difficulty in getting to the edge of the brick and then goes nearly straight downward, thus leaving the soil immediately below the brick unsupplied from this new water influx. Now, when the opposite movement of soil fluid begins the water moves upward until it encounters the brick, and the soil immediately above the brick, which has in the meantime dried out, remains unsupplied with moisture, so that the grass suffers and dries out during a critical dry spell. Bad spots in small city lawns are more often than not found to be due to some such impediment to the movement of capillary water.

"A lawn soil should have a good supply of moisture at all times. It should be able to take care of excess during the wet season by drainage and during the dry season be able to supply stored-up moisture from its depths. This adequate water supply is the principal factor in grass growth and the one most difficult to control in a poor soil. It is more important than any added fertilizer, and cannot be compensated for by the addition of any amount or kind of chemical plant food. All suggestions regarding lawn soils, their texture, selection and manipulation have been made with one end in view—the creating and maintaining of an adequate water supply in as natural a manner as possible. If this water supply is maintained effectually by a normal soil, the natural processes which go hand in hand with it, such as proper bacterial activity, aeration and oxidation, soil sanitation and the supply of plant food generally, are also sufficient for a healthy growth of good greensward."

A soil well adapted to lawns should consist of clay, silt, very fine sand, medium sand, coarse sand and fine gravel. It is this difference in the size of soil particles and in the proportions in which they are present in soils that has given rise to the different classes of agricultural soils, such as the clays, clay loams, sands and sandy loams. This difference determines the texture of the soil. The texture is a particularly important factor in a successful lawn, as it has a very marked influence on the kind of grass or combination of grasses and clovers best suited to the soil; on its ability to hold sufficient moisture to carry the grass through a prolonged drought; on the ease of establishing good natural drainage; on the account of aeration, and on other requirements.

The clay soil usually makes very strong lawn soils, giving a dense sod. The clay loam soils, when well drained and carefully handled, are well suited for the establishment of an excellent greensward. The silt loam soils are ideally adapted to lawn making, but they must have good drainage and be liberally supplied with organic matter. The loam soils, when they have good drainage and contain sufficient organic matter, will maintain good lawns. The coarse, sandy soils are unsuitable for

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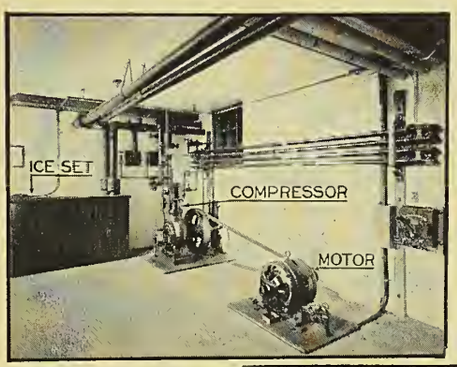
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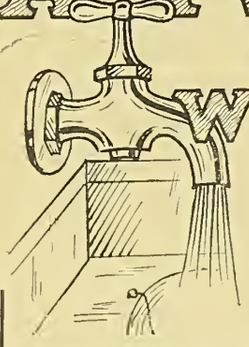


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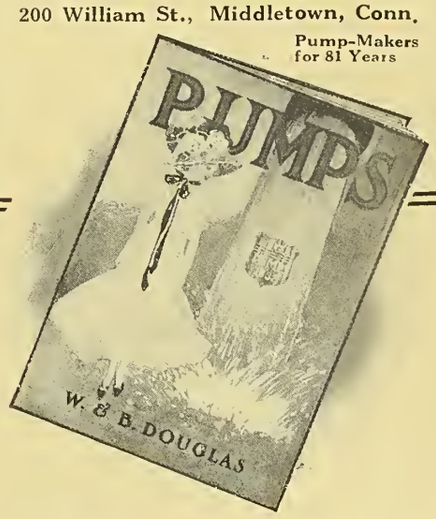
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lawn purposes, although certain grasses will grow upon them. A fair lawn may be established on soils of the fine sandy type by paying especial attention to the preparation of the soil and by the introduction of manure or green manure together with bone phosphate and lime in some cases and copious watering during the dry seasons. The sandy loam soils make very good lawns when well drained and well supplied with organic matter.

"Since the lawn is intended to be a permanent feature of the decoration of the place, its endurance or span of life is of utmost importance. In general, grass seeds are small and the surface seed bed for the reception of these seeds need not be more than one inch in depth; but since the grasses, as they become established, send out long, lateral feeding roots, it is necessary that the soil area available for these plants should be as great as possible. This object can only be obtained by deep cultivation and thorough preparation of at least eight or ten inches of the surface soil. The soil to this depth should be made rich and put into an ideal condition for the development of plant roots.

"Since the lawn is a permanent feature, it is hardly possible to make the soil for the reception of the lawn too rich. Stable manure which has been thoroughly composted and rotted and which is as free as possible from detrimental weed seeds is undoubtedly the best material to use in producing the desired fertility of the soil. Forty to sixty loads of well-decomposed stable manure are not too much to use upon an acre of land designed for the greensward.

"Not all grasses are adapted to lawn making. Only such kinds as are capable of making a close turf are ideal for lawns. Most grasses which have creeping root stocks, short joints and produce long, narrow leaves in abundance about the crown of the plant, adapt themselves well to lawn making. Besides this, a desirable lawn grass possesses a pleasing color, which does not change decidedly from season to season, is drought-resistant, responds quickly to a change of conditions from winter to spring, and bears repeated clippings with a lawn mower. The requirements of these grasses are exceedingly exacting, and it is not surprising to find the list of such grasses a comparatively short and meager one.

"In procuring seed for a lawn, too great care cannot be exercised. Pure seed, of high germination, is of great importance in securing a good stand of grass. Pure seed is the keynote to a clean lawn, provided the work of preparing the land has been efficiently done. Thorough preparation involves not merely the mechanical treatment of the soil to reduce it to a proper seed bed, but the use of weed-free manure and the adoption of a course of treatment previous to preparing for the lawn which shall serve to eradicate weeds. Such preparation, coupled with pure seed, should give a satisfactory stand of grass which shall need only the usual care neces-

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sary to maintain a lawn after it is once established. Too much cannot be said in favor of securing pure seed, and, if possible, specially selected seed. This is, of course, of considerable importance with light seeds like bluegrass, redtop and seeds of the bent grasses. In the case of bluegrass, select seed weighs about twenty-two pounds to the bushel, while the ordinary grade of bluegrass, although it may be called pure, averages about twelve pounds to the bushel.

"It is better to use an excessive amount of seed and allow natural selection to eliminate the weak specimens rather than to seed sparsely with the hope that the natural habits of the plants will be sufficient to enable them to take possession of the entire area.

"Bluegrass, bent grass and the fescues, if used in combination, should be sown at the rate of three to five bushels of seed to the acre. Bluegrass, if used alone, should not be used at a rate less than fifty pounds to the acre, while seventy pounds is better. White clover, if added to the collection of the above-named sorts, should be used at the rate of one peck to the acre. Upon sandy or gravelly lands and in spring seeding, white clover is an important factor, because it germinates quickly and covers the ground, affording protection and presenting an attractive appearance earlier than is possible by the use of other grasses. White clover, too, is able to re-establish itself very quickly after periods of severe drought, and until the bluegrass, redtop, bent grass and fescues become thoroughly established the white clover will usually be in the ascendancy. As the turf-forming habits of the other grasses become more marked, however, the white clover will gradually disappear and give place to the other more permanent grasses."



The Hundred Per Cent. Garden

(*Continued from page* 459)

Try to prevent the formation of a hard crust anywhere in the garden at any time; it is much easier and much more satisfactory to keep going over it and over it without any thought as to the number of times than to let the weeds get ahead of you or the ground get hard, when you will find that work that might otherwise have been done in ten or fifteen minutes will take an hour or two.

All this work with the wheel-hoe will of course take care only of the ground between the rows of vegetables; the soil between the plants themselves will have to be broken up and the wheels removed therefrom by the fingers or a small hand weeder, and this work has for the most part to be done on the hands and knees. By following the above suggestions you can reduce this work to a minimum, but only if you are prompt with what there is

This is the "Genuine Economy" House

Below is a residence recently completed in St. Louis, with 13-inch solid brick walls, faced all around with Hy-tex No. 508, tile roof, copper gutters, cut stone sills and trim, and other details in keeping. It cost $9875.00.

The contract price for the brickwork, including

Hy-tex Brick

and labor, was $1465.00. The contract bid for the walls as if built of frame was $1137.71. The stone sills and trim in the brick house cost $102.00, making the excess of the brick walls over frame only $429.29.

Contract bids for the same house showed the excess cost of brick to be $610.19 in Indianapolis, $671.29 in Omaha, $755.02 in Philadelphia, $771.70 in Cleveland and $855.00 in Minneapolis. The average excess of brick in these representative cities was $682.08. The greatest excess of brick amounted to only 8.6%, the least 4.4% and the average 6.9%.

Except stone, which is more expensive than brick, costs of all other forms of construction lie between the 13-inch solid brick wall and frame.

The slightly higher first-cost of the Hy-tex house brings with it savings in up-keep and repairs, fuel, fire insurance premiums, painting and other fixed charges, making Hy-tex the genuinely economical building material. In addition the Hy-tex house is fire-safe, beautiful and durable.

Our new booklet, "Genuine Economy in Home Building," illustrated in colors, takes up the elements that enter into building economy in a comprehensive way. Every prospective home-builder should have it. Sent to any address on receipt of 10c to cover mailing charges. Send for it now.

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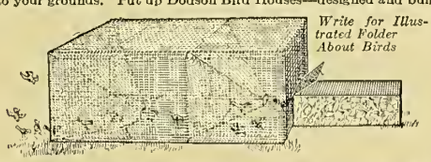
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The May issue of **Meehan's Garden Bulletin** will be devoted to vines, roses, hardy garden flowers and evergreens suitable for Summer planting.

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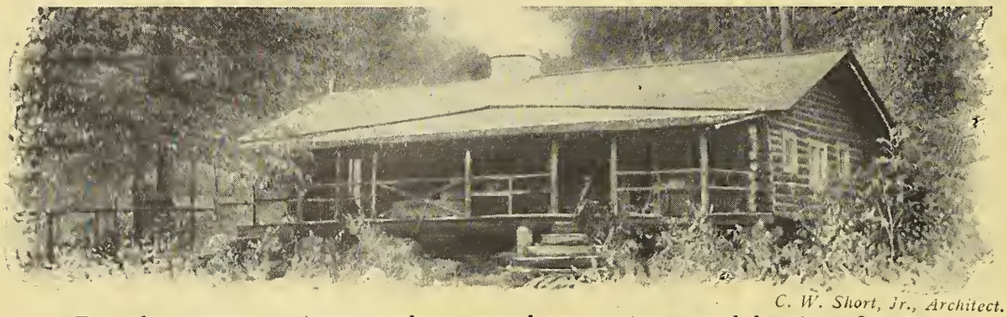
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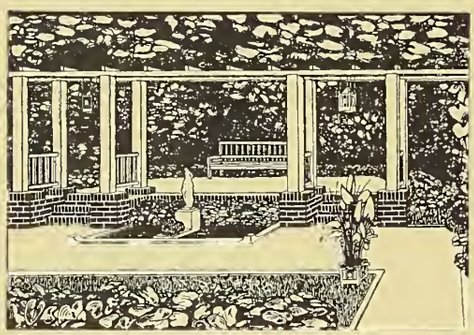
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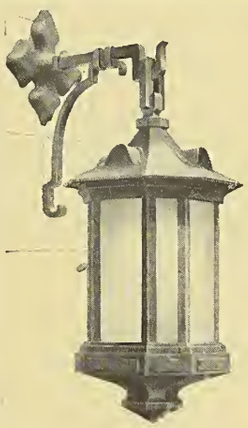
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to be done. The best time to destroy weeds is just after they are sprouted and before they are an inch high. In going over the soil, every square inch of soil should be broken up, as in this way you will destroy hundreds of the little seedlings which are not yet above ground. Of the various types of hand weeders I personally prefer that known as Lang's, which has a small strap to slip over the middle finger, thus holding the weeder secure in the palm of the hand while the fingers are being used to pull weeds and so forth.

Nowhere is the old adage, "A stitch in time saves nine," more applicable than in this business of hand weeding, and unless you have already done so much of it that you know how to proceed at every step, you may save yourself quite a good deal of trouble by giving careful consideration to the suggestions which have been offered above. Every year many gardens and parts of gardens are abandoned which might easily have been saved if the work which should have been done in them at some stage early in the game had not been postponed "for a day or two."

The other two implements which are of most service in the garden are the ordinary rake and hoe. The latter is used more than it should be and the first not so much. The "man with the hoe" is an anachronism in present-day gardening if the gardener will only take the trouble to use up-to-date methods. The rake to select for garden purposes is the sort with an iron or steel head attached by a "bow" extending from either end of the head to the handle rather than directly to it at the center. It should be used not only in preparing ground for planting or marking out but also between the rows of newly set plants as soon as they are put out or to rake over the soil between the rows where they are far enough apart after working with the wheel-hoe; this not only puts the soil in its finest possible condition for keeping the soil mulch and thus conserving the moisture which will be needed later on, but also drags up and exposes to the drying out influences of wind and sun thousands of small weeds which otherwise even if they have been rooted up, might be sufficiently buried to take root again, a thing which they will do very readily, especially in rainy weather. The ordinary, old-fashioned hoe was formerly used extensively in the care of almost every crop grown; one of its chief purposes was to drag the soil up to the plants in the row, "hilling," as it was called, a slow, laborious and under proper conditions a useless task. About the only job for which one should need a hoe in modern gardening is to destroy small weeds and to loosen up the soil close up to and between plants in a row where it cannot be reached with a wheel-hoe, and when the plants have grown large enough so that finger weeding is not necessary. For this purpose you will find the small, light hoe, called in most sections an "onion hoe," very much easier to use and just as effective as the old-fashioned large kind with a blade eight

inches or more long and several inches wide.

Though, of course, the cultural necessities of the various crops differ to some extent, all should be kept clean, all will benefit by frequent cultivation between the rows, and suffer if weeds are allowed to usurp their food, water and air. There will be special things to learn about each, and the good gardener has his eyes continually open for these differences. For instance, some crops should be cultivated more deeply than others, though all may be cultivated more deeply—especially towards the middle of the space between the rows—early in the season than later when they are filling the soil up with growing roots; when these roots are broken off through careless cultivation the plant's growth is either checked or retarded, if permanent injury does not result.

Parsnips, salsify, carrots, and other deep-rooting plants which send a main taproot far down into the soil are not readily injured by cultivation between the rows, but extreme care must be used not to go too deep with such things as sweet corn, melons, cucumbers, squashes and other plants which are either shallow rooted or send out most of their roots in a lateral direction, not far below the surface of the soil. For such things two inches will be deep enough for cultivation during all the later stages of growth, and extreme care must be used in weeding and hoeing close up to the plants.

For your own comfort you will probably learn not to work among your plants or pick crops while they are wet. Such things as beans and celery are very likely to be permanently injured if disturbed while wet, as this has a tendency to spread the disease known as "rust."

Plants which require training to a trellis or pole of some sort should be attended to while they are still small, as it is almost impossible to get them to stick to anything when they have once been allowed to grow top-heavy and lie upon the ground or become entangled with each other.

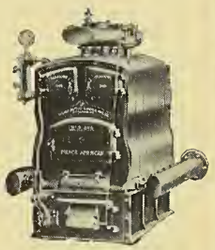
Plants which are kept in a good, healthy, thriving condition of growth are not at all likely to suffer from the effects of the various diseases, or to be very much injured by the attacks of insects, but the good gardener soon learns to have an ever-watchful eye open for the dangers of this sort; he is soon taught by a few expensive lessons that it is even more important not to be a day behindhand in fighting bugs than in fighting weeds; after the very first sign of trouble he should make it war to the death and no quarter. Most of the insect pests *if taken in time* may be successfully if not easily combated; when they are once allowed to get even a small start, however, it is a very different proposition, and not infrequently an entire crop will be ruined by them.

In last month's issue of HOUSE & GARDEN, directions for applying the various sorts of sprays were given, and the reader is referred to that article. A good compressed air sprayer and a powder gun



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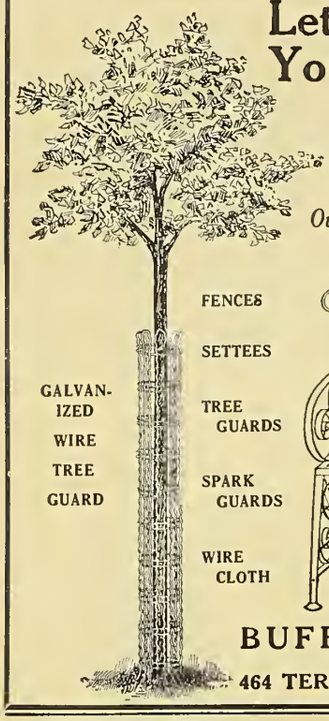
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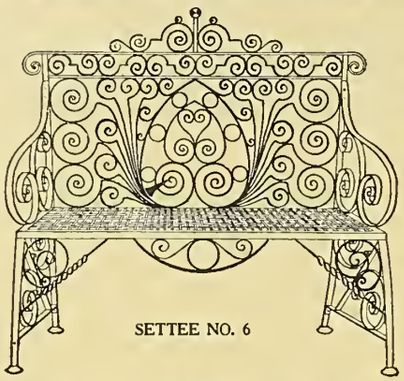
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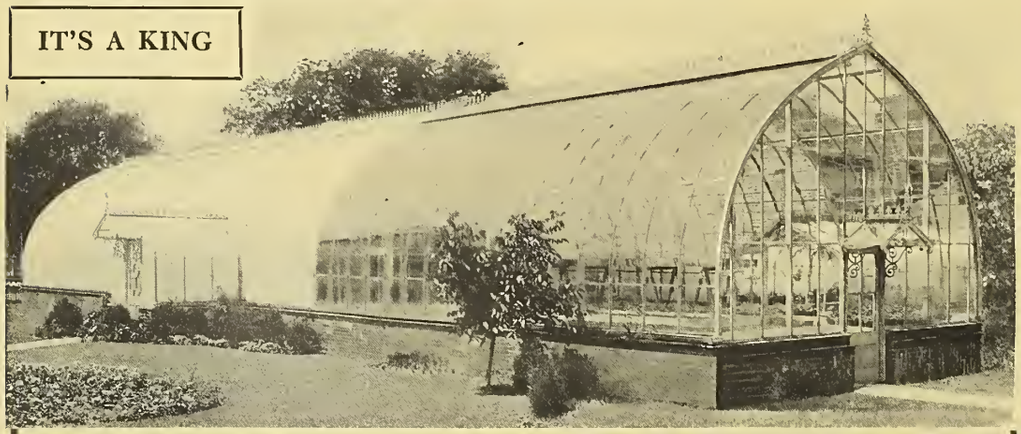
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should be included in every good garden outfit, and a supply of arsenate of lead, Paris green, tobacco dust as insecticides and Bordeaux mixture for a fungicide to use against such things as rust, mildew and blight, should be kept constantly on hand.

For cucumbers and squashes, especially where only a few hills are grown, bottomless boxes, eighteen inches square and eight or ten inches deep, covered with mosquito or fine wire netting, are most effective during the early stages of growth, when injury is most likely to result.

It is usually a good plan to look over the garden the last thing every afternoon, if you have a chance to, and decide what you will do the next day, or the next time you have an opportunity to work in it. The weather or some other unforeseen circumstance may prevent your carrying out your program exactly, but it is always best to have some definite job to look forward to, and also it will save you a good many hours, during the season, which would otherwise be wasted in "puttering round."



Tender Greens

OUR list of "greens" is a fairly comprehensive one, for with it I have placed the salads. Necessity obliges me to make this broad classification, else would my pages become wearisome reading. If, in spite of the best that I can do, a weariness is felt, it will be because I have failed to bring into them that touch of personality which redeems all that the cook does—or says.

When I tell you how and why we have such and such a thing cooked in this or that way, you must figure to yourself, if you will, my white-capped, broad-backed *bonne*, whose round face is seriousness itself while she is at her task, although her busy tongue might lead you to suppose it was that which was working the hardest.

No lesson given by book or word of mouth is equal to the one given by ocular demonstration, nor is any recipe so good as the one you have tried and tested and proved, succeeded or failed with, yourself. Next to that I would place the recipes with which some one well known to you has done likewise. In all the recipes given herewith the testing has been done either by my cook or by myself, or by some one whom we have both believed in as being equally wise. Other people may give you better recipes, perhaps, but these are good, believe me.

I will ask you to bear in mind that a tin utensil must never be used when cooking greens, although you may use nontinned copper; but our own practice is invariably to use enamelled iron for boiling or rapid cooking, and the earthen casserole or marmite for the stew or *purée*. Salt and a little sugar are put into the water, and where the cabbage or the peas seem gone past their prime we put in the

slightest pinch of soda. Where it is possible to cook a vegetable by steaming it, we avoid boiling in water, and after either boiling or steaming there is invariably a further process of simmering and seasoning to be gone through before it is ready to serve.

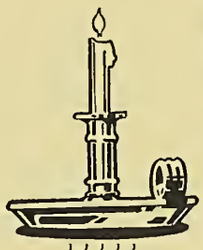
Spinach is one of those greens which we neither boil nor steam, although we cook it until tender before dressing it in its severest modes. But after it has been carefully washed and all stalks that seem tough have been discarded there is sufficient moisture left on the leaves to cook it, and in a covered vessel, with a handful of salt added, it will cook in its own steam quite well. After ten minutes you may drain and press it, season, and add to it butter or gravy, according to any individual preference you may have.

When there is no gravy of meat, I do not grudge the liberal addition of butter which my cook considers necessary, although sometimes I am compelled to hint that it is *la mort au beurre*. The result is, however, delicious, and the *purée* appears under eggs, or with the braise of veal or mutton. Then sometimes we have it mixed with cream and egg-yolk, and served in cases of fried bread, decorated with powdered yolk and the shredded white of hard-boiled egg.

The first early sorrel we use alone in the same way, and later in the season a few leaves of sorrel are generally added to the basket of spinach to give sharpness to the flavor thereof. But our best use for sorrel, I am persuaded, is that delicious soup we call *Potage à la Bonne Femme*. For this the marmite is half filled with water or with onion stock, and we put into it when boiling a slice of fine white bread, absolutely without crust, and cut into dice. In the meantime in another pan several fresh spring onions have been added to some two or three ounces of butter, then a couple of handfuls of sorrel leaves, a heart of cabbage lettuce, some chives and small herbs, all minced together, are put into the same pan, and covered down to simmer for half an hour. After cooking through, these are crushed and a little salt and pepper added, then the whole is put into the marmite and allowed to cook a little longer. Before it is served the pot is drawn aside to cool slightly, and the beaten yolks of two eggs and a little milk or cream are gently stirred in. This slightly thickens the soup, and it is ready to pour into the tureen and serve out with fried bread.

With sorrel we make also a fluid *purée*, or rather sauce, for eating with veal or fowl, and when cold this same sauce goes most agreeably with cold fish.

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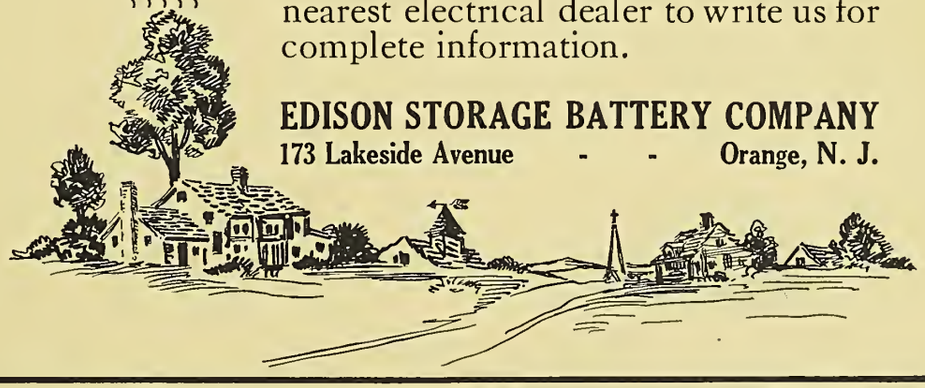
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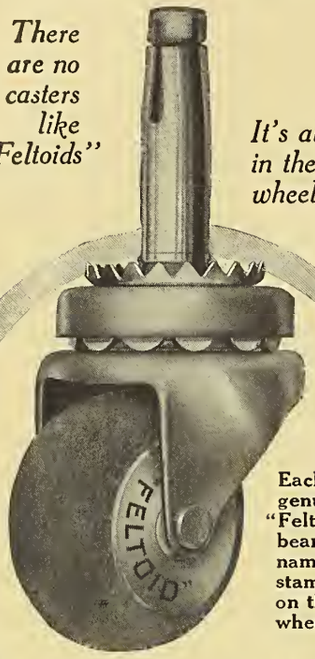
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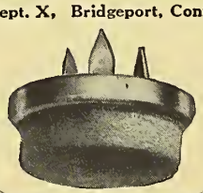
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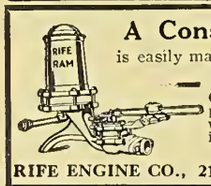
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and cut into half, the lettuces are thrown into boiling water with salt to blanch them, then lifted out and drained. They are then laid in a stewpan with sufficient vegetable or bone stock to cover them, with a spoonful of minced onion, of parsley and mint or tarragon, also minced, some pepper and salt and a little butter. They simmer under cover for an hour or more, and are then laid in a hot dish. Cooked peas or beans are used to fill the hollow centres, and a little of the liquor, being thickened and reboiled, is then poured over.

Another little dish which my cook is proud to set before us is that of lettuce cakes.

The firm leaves of large lettuces are cleaned, then blanched in boiling water, and laid flat on a board. On each one is spread a *farce* of minced onions and herbs mixed with cooked rice, and, if meat or bacon is permitted, a little of that, or if not some grated cheese, also seasoning, and the whole made moist with tomato sauce. The leaves are then rolled and tied into shape, and the rolls are placed in a buttered pan with a little stock and gently stewed for about an hour. When dished a little of the stock is thickened and browned and poured around the rolls.

Our young nettles are cut down and boiled and served with the roast of lamb, and are not a whit inferior to spinach except that they are milder in flavor, but the touch of mint sauce that comes at the same time gives piquancy without interfering with the flavor. "Good King Henry" or Mercury has, on the other hand, a decided flavor of its own, and is improved after boiling by being returned to the pan and cooked again with butter—and plenty of it. But it is a most excellent herb for the blood, and adds yet one more to the list of "greens" medically serviceable to man, the heir of many ills.

In the cooking of the stronger—shall I say the coarser?—greens, such as cabbages, curled kale, Brussels sprouts and broccoli, I have noticed that the cook is careful always to blanch them first and then cook in a second quantity of water. She tells me that this is the secret not only of keeping them a good color, but of getting rid of those bitter flavors and injurious substances which make cabbage and its kin indigestible.

As our liking for these greens is not very pronounced, and as we do not grow them for ourselves, except a few roots of sprouts, we do not often have them on our table. Nevertheless, there are a few occasions when a little cabbage comes in appropriately, and the first young earlies are certainly delicious, therefore I tell you what are our modes of treating them.

After washing, the half cabbages are thrown into a panful of boiling salted water and left for five minutes. When drained from this, fresh boiling water is poured over them, more salt and a little sugar. They cook, with the lid off the pan, until quite tender, then are drained



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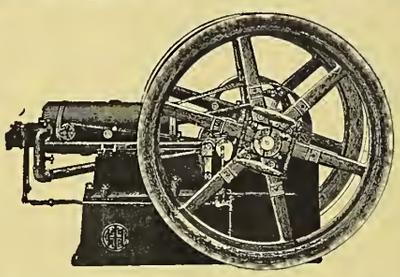
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and pressed and chopped finely and returned to the pan with butter, pepper and a sprinkling of salt and a dash of vinegar, to steam through for half an hour. By being pressed into a mould before turning out into a dish the shape is improved, and it is possible to pour a nicely-flavored brown or tomato sauce round the base.

Brussels sprouts, after boiling, are stewed with broth or butter, or sometimes placed in the gratin-dish, with butter and grated cheese and heated through in the oven, or in place of cheese a few of the thinnest possible slices of fat bacon are put over them and the dish is set under a grill.

Very nice, too, is a savoy heart, the leaves of which, after blanching, are opened out and a savory mince filled in between. The whole is tied up afresh and stewed in a casserole with some good broth, which when thickened makes a sauce to pour round the centre piece. A little curry powder improves the dish.

French beans, when forced and gathered young, we never slice, but have them whole after stripping off the ends and fibres. They are much finer in flavor if so treated, and if really long and large can be broken across. They are boiled in water until quite tender, and then strained and returned to the pan to simmer through again with a little butter and minced herbs, or with parsley only.

If the beans are grown out of doors and likely to be somewhat tough, we parboil them, then strain and put them into an earthenware jar and give them more butter, an onion, more herbs, salt, pepper, and enough vegetable broth to cover them. They are then closed down and gently stewed for an hour or more. A little of the liquor thickened with a spoonful of baked flour and the yolk of a raw egg makes the sauce to serve with them.

When destined for eating cold as a salad (and French beans broken into short lengths make one of the nicest vegetable salads), they have to be well drained after boiling, and must not be dressed until the last moment. Plenty of minced parsley is added to the bowl, and rather more vinegar than would be the case with the ordinary salad.

When freshly gathered, the small bean found inside the ordinary French bean is delicious, and needs no long soaking as the dried bean does. We invariably save a few of our plants so as to have some of these for use. Butter beans, gathered before the bean ripens, are eaten in the pods with butter sauce, and are most delicate. The majority of our plants are, however, left untouched, so as to yield the large white bean for winter use.

It is only the scarlet runner bean that we slice and serve after the ordinary English fashion, and even this I must say I think is improved by being cooked after the Dutch mode, that is in a jar, with butter and parsley and in its own steam.

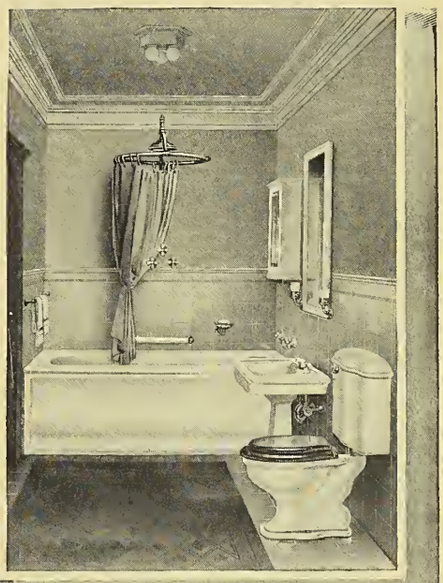
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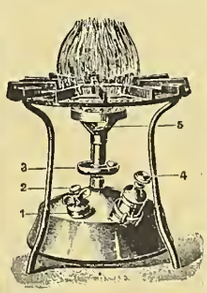




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The shelled peas are put into a stone jar with some leaves of fresh mint, a couple of tablespoonfuls of water, a good pat of butter, and a spoonful of sugar and salt. The jar is tightly closed and set in a pan kept full of boiling water, to stand on the stove for two or three hours. It is taken out and sent to table tied round with a napkin, with a spoon for serving out the peas.

The French mode of treatment is similar, only it is found good to add the leaves of a young lettuce to help keep in the steam, and the flavor of a small onion is deemed an improvement. The jar is sometimes set in a corner of the oven and cooked with a little more speed. When lettuce leaves and young onions are added to peas, I do not, of course, use mint.

Some nicely boiled fresh green peas, with the flavoring of mint, make one of the prettiest and daintiest garnishes for other things. A charming dish is made by cooking tomatoes (whole) until tender, having simply taken away the stalk end, then after sprinkling these with salt and pepper a poached egg is set on the top, and the whole stands in a thick border of green peas. Truly Italian is it in color.

And now let us speak of salads. I have said that we have salads all the year round and that the bowl appears on our table almost every day, either for luncheon or dinner. It has nothing to do with the meat or vegetable section of the menu, although it claims relationship with the cheese, for we have one very delicious salad, in which cream cheese makes a conspicuous figure, the cheese being broken into rough fragments and set on white leaves, arranged on a plate, and cream dressing poured over; and then again, the uncut leaves of well-blanched cos or escarole, like the stalks of crisp celery, go admirably with other kinds of cheese, the dressing being passed round in another vessel.

Some of our salads are composed of cooked vegetables left till cold—potatoes sliced with fine onions and cucumber; tomatoes and carrots together; French beans, sprigs of tender cauliflower; celeriac, salsify, seakale, asparagus, and celery, all admirable. We do not favor—indeed we think the custom barbarous—introducing beet root and tomatoes and a host of things with lettuce into one salad. So-called garnishes, and cress, mint, parsley and herbs, need to be used with the utmost discretion. The simpler a salad can be kept the better it is.

Old John Evelyn, in a highly laudatory and grandiloquent "Discourse on Salletts," mentions among the furniture and materials of which a salad may be composed no fewer than eighty-two items, but eventually, by the assistance of "Mr. London, His Majesty's Principal Gardener," he reduces them to a number not exceeding thirty-five. His disquisition casts quite an air of dignity over the salad bowl, although, as he says:

"Some will doubtless wonder what my meaning is, to usher in a trifle with such magnificence and end at last with a fine

receipt for the dressing of a Sallett with a handful of pot herbs!"

About dressing of salads, as well as about their composition, a great deal has been written and said—a deal that is superfluous. Probably no two people have ever been in perfect agreement as to the dressing of a salad. Personally, I am inclined to feel in sympathy with Dr. Bushwhacker, when he quaintly says:

"A bowl of lettuce is the Venus of the dinner-table. It rises upon the sight, cool, moist and beautiful, like that very imprudent lady coming out of the sea, sir. And to complete the image, sir, neither should be dressed too much."

For ourselves, we have perhaps only two distinctive dressings that we use, other variations are mere matters of flavor. One of these is the simple French dressing of oil and vinegar, with pepper and salt lightly sprinkled in, the other is really a *mayonnaise*. When required for a *mayonnaise* of vegetables or fish this second dressing is a slightly richer edition of the dressing I have mentioned once before as one which can be kept in store. To that we should add another egg yolk, and it might be the yolk of a hard-boiled egg rubbed fine and mixed with the mustard also.

It would be the best lesson in salad mixing and dressing for any one to come and watch my cook prepare it. To begin with, she is loth to wash her lettuces if they can be cleansed by wiping or shaking. I think she and the gardener come nearest to quarrelling when he brings her a lettuce that is gritty with dust—it ought to be grown clean, she declares. Of late I have found he has adopted the plan of rinsing the whole lettuce in a pail of water and letting it dry before he brings it to the kitchen door. He grows canny. If I remark on the pains he takes to please her, the cook replies with a shrug, "'Tis but what he would have to do for the market, after all!"

She does not, you see, know that our vegetable markets in England would be thought disgraceful in her country. I am trying to instill into the gardener's mind that the outer refuse of vegetables ought never to go into the house at all; it should be burnt and returned to the soil as its due. Is not this a common practice with our friends the Dutch, and where do you see finer vegetables than in Holland?

But to return to the cook and the salad bowl, which for the moment you may imagine that you see her filling. Her large, quick fingers break up the leaves, keeping out tough stalks and discolored bits, and with the *petite laitue* (the thinning-out of the lettuce beds) she is endlessly particular. Her herbs, just a few carefully chosen leaves, and her onions are finely minced and put at the bottom of the bowl first of all, and it is gradually filled with the green stuff. Salt and pepper are sprinkled over, then she holds the bottle of oil in one hand, and with a fork lightly turns over the greens, using her judgment as to the precise amount of oil to put in. I trust no one will ever ask me exactly



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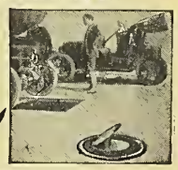
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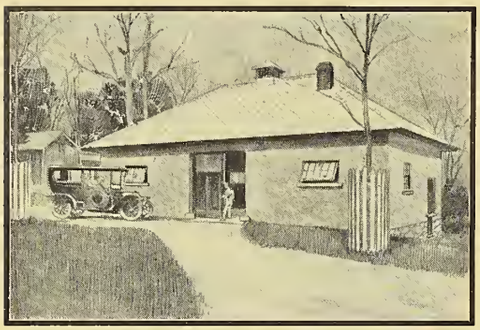
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how much oil she has put into a particular salad, for I could never say. Her salads are never greasy, but each leaf has its due, and shines complacently. Then, last of all, a spoonful of vinegar is lightly sprinkled on, and the gentle process of "fatiguing" the salad commences. This is a process she enjoys; she will even wax poetical at this time. Her movements with her salad are steady, methodical, gentle to caressing, and when she has done it is a thing that would indeed "tempt the dying anchorite to eat."

There is no *sediment* left at the bottom of this bowl, no grit, no lurking atoms, no sourness of vinegar, nor does any moisture collect. It is a good salad.

A vegetable salad, when *mayonnaise* is used, is dressed only just before it comes to table, as if left long the *mayonnaise* is apt to separate and the vegetable to get sodden. After the *mayonnaise* sauce has been poured over it the garnishing is done, but this takes but a few seconds. Such a salad, of cold potatoes, arranged in circles with rings of tomato, cucumber and onion, decorated with a sprinkling of finely-minced parsley, looks most appetising. If any difficulty is found in removing the skin of tomatoes, it is helped by dipping them into boiling water for a moment first. Very pretty is a salad of potatoes or other white vegetable garnished with a *macédoine* of other vegetables nicely varied in color.

Occasionally we get what might be described as a *tour de force* in the matter of salad-making, but only occasionally. As a rule we are content, as the cook is, with the plainer sort, satisfied to know that she can do great things and rise to the opportunity when it arrives. When it does arrive, let the season be what it will, she is never dismayed or put out where her salad bowl is concerned.

LUCY H. YATES

The Southern Garden Department

CONDUCTED BY JULIA LESTER DILLON

The writer of this department will gladly answer inquiries from Southern readers in regard to their garden problems. Please enclose a self-addressed, stamped envelope if a prompt personal reply is desired.

Taking Stock of the Summer Garden

JUNE in Southern gardens should be the stock-taking month. There is no time for rest or hesitation now if the garden is to show its quota of midsummer bloom. The first thing to be done is to get through with the clearing of the borders. Bulbs of narcissus, snowdrops, Roman hyacinths, daffodils, and jonquils, seem to grow and multiply better if left in the borders, where they have been placed. Tulips, crocuses, the double hyacinths, and all the finer bulbs, must be left in the ground until fully matured, which is in-

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dicated by the decay of the leaves, and as soon as these have turned yellow and fallen off, the bulbs must be taken up and stored in a dry place until it is time to replant them in the fall.

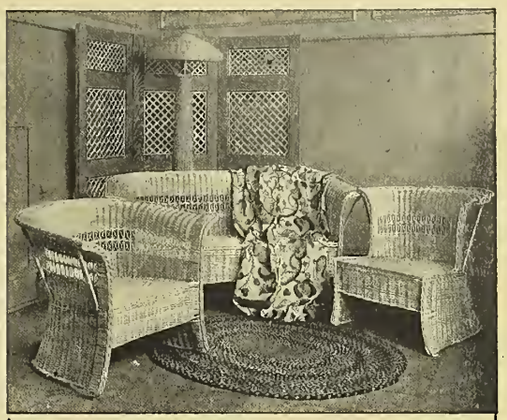
After the crop of flowers is over, the deciduous shrubs should be cut back, in order that the new wood, on which the blossoms of the next year will come, may put forth in abundance. The price of flowers for next year is the pruning shears right now. The symmetry of the specimens may also be improved by the use of the scissors at this time—but be careful not to cut too much. The cydonias, deutzias, *Philadelphus coronarius,* jasminium, spireas, viburnums, syringas, punicas, forsythias, and weigelas, and the spring-blossoming vines, like the wistaria and jasmines, should all receive careful attention. None of them should be touched until the blooms are over. For most of the abovementioned, June will be the right season, but some of the later-blossoming ones may better be left until July.

The evergreens, including the oleanders, or neriums, and the hydrangeas, I never prune at all, except to take off the dead branches after a trying winter, and possibly to remove some of the lower hydrangea shoots for the sake of neatness. This is not the rule of the florists, but it gives me magnificent results, and that is the aim of all our work, is it not?

By the end of June the sweet peas will be over and the trellis must be removed and placed in new positions for the main crop of garden peas which will be ready for them by that time. The long lines left vacant, when the pansies are thrown out, the places where the poppies glorified the border and the sweet peas blossomed for so many weeks, are filled in with verbenas, mignonette, snapdragons, stocks, zinnias, asters, ageratum, salvia, and coleus. June is very late to do this transplanting, but, if it is done in the afternoon after a rain and the plants are shaded for a day or two during the noon hours, the chances are that most of them will thrive. This is the time when the thinning out process serves the gardener in good stead. There are sure to be parts of the borders where the plants are as thick as peas and other places where the seed has forgotten to germinate. All these spots should be evened out and now is the accepted time.

Because the garden is a blaze of glory with helianthus, sweet williams, zinnias, hollyhocks, petunias, nasturtiums, and all the other blossoms in full beauty, is all the more reason why you should plan to keep it so, and not only planning, but everlastingly keeping at it, is necessary to accomplish this. If the bare spots are filled in, the crowded places thinned out, the colors changed or arranged so that they do not clash, a garden of midsummer loveliness will be the reward.

Except in the old Southern gardens where the oleanders, the pomegranate blossoms, and the summer lilies make summer gay, the usual rule is that after

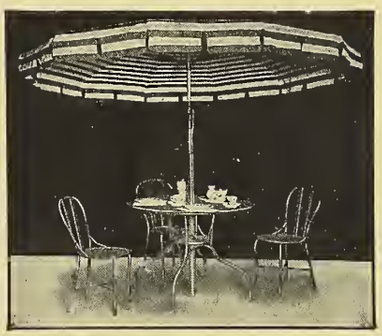


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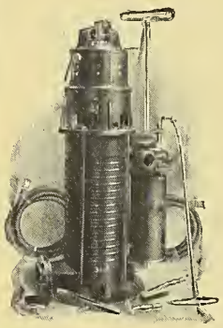
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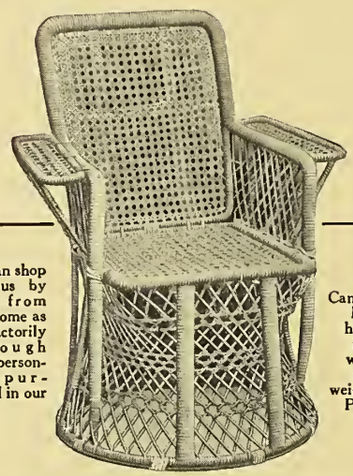
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the June blossoms are over, there is no more bloom until fall, except the masses of the hydrangeas, the cannas, or sporadic perennials. This is all wrong, and June stock-taking will remedy this fault. The wonderful beauty of the spring blossoms should not cause us to forget that judicious planning and planting will make our Southern gardens beautiful for twelve months in the year.

The numerous annuals, if kept well cut, will give bloom until frost. If the perennial phlox is planted in mass and in abundance the garden will be fragrant and beautiful through all the trying heat of the summer days. If the asters, zinnias, salvias, and colei are planted in proper proportion, the borders will be rich and colorful from June until autumn is over. Now, now is the time, fill up the barren spots. I cannot reiterate this too often.

The Early Wonder white asters in clusters among crimson zinnias will bridge the space between the June sweet peas and the August flowers. The white ageratum will throw its mist-like blossoms among the fiery spikes of the scarlet sage, and the white petunias, with their fragrant cups massed among the vari-colored colei, will blossom through all the scorching summer days. Plant now, and plant in masses of a dozen, or a hundred would be better, and see if the result is not worth while.

A June inheritance of my garden, that has given pleasure and beauty for a half century, is the *hydrangea grandiflora,* which, with its masses of blue and pink loveliness, has framed the lines of our front porch for all these years. For immediate effect, for terrace and porch decoration, or for masses anywhere, these and the neriums may be purchased in tubs and used during the summer and placed in permanent positions in the fall. The *monstrosa,* the *otaksa,* and other pink varieties of the *hydrangea grandiflora* are more attractive to me than the white kinds. The use of small lumps of alum around the roots of the pink varieties will cause them to show heads of beautiful, clear, blue blossoms. A little pruning, after the winter is over to get rid of the dead branches, much fertilizer in the fall and spring, and sunshine and rain will do the rest.

The glory of my June garden is a stately white oleander or nerium, which has been a joy, for many months each year, for at least seventy-five years. It was planted by my great-grandmother and its fragrant clusters of starry white blossoms are as invariably a part of our garden picture as the summer itself. Annually, I thank the dear old lady, whom I never saw, for this, my heritage.

For many years it was absolutely neglected, but bravely and proudly it held up its head and now repays the extra feeding of manure in the fall and fertilizer in the spring, by a prodigal munificence of bloom. It must be seen to be appreciated. At least ten feet tall and twelve feet in the diameter of the spread of its branches, with every stem topped by one or a dozen

clusters of white blossoms, with the sharp lance-like leaves of every shade of green, with the black branches strongly outlined against the soft greens of the lawn in the foreground, it is a June poem. Sometimes it is a January poem, with the snow wreaths from the skies enfolding its evergreen loveliness.

All of the plants of this species grow in luxuriance and are perfectly hardy in this latitude. From the coast of South Carolina to the borders of the Gulf in Texas they are to be found in every garden of the olden days, and the greater the age, the greater the beauty with which they bless the world. No Southern garden of this later day should be without them. They grow very slowly but are well worth while at any age. In both light and dark pinks, in single and double, they are very desirable additions to our Southern garden and Northern greenhouse plants. I find the single white the most satisfactory, both in point of growth and abundance of flower. Beginning to bloom in May, in full glory in June and July, they lift their snowy masses skyward, dimly beautiful in the starlight, radiant in the moonlight, and glorious in the sunlight, until the chill of October brings the message that autumn has come and winter is not far away.



Desirable Considerations for the Summer Home

(*Continued from page* 457)

bers and it forms a deep recessed piazza on one or both sides if desired, and eliminates the flat piazza roof thus preventing heat being reflected into the chamber windows. The high roof with its long slopes casts a good shadow and deep shadows are soothing and cooling on a hot summer's day. An over-hanging second story requires solid well-proportioned columns under it, both for support and effect. In such a place they should be in effect sturdy, rather than graceful.

The cornice of the piazza roof should project well out and be very low to give protection from sun and rain, particularly at the seashore. We use our American porch much as the Englishman uses his terrace or garden with its tea house or canopied tent, but without the privacy required for his retiring disposition. It is distinctly American and is the outgrowth of conditions and the growing tendency toward outdoor life for the whole family. Since we are not all blessed with broad lands, estates and gardens, we have developed a convenient way of confining our outdoor life to a small area with as much privacy as possible under the limited conditions imposed. The garden, I hope, will not be overlooked because it is a source of pleasure as well as an ornament to a summer house. It is really necessary as part of the setting and like a frame completes the picture.

HIGH time you were out in the garden under smiling vernal skies, planting in the summer flowerbeds. An early start now, means luxuriant beds all aglow by end of June.

We send anywhere in the U. S. or Canada, large full-size greenhouse plants, charges prepaid by parcels post.

They are big plants ready to set out, such as the little local florist charges you one dollar per dozen for; not the miserable little runts, uncertain to live or die, you generally get by mail. We send you with free cultural directions any 100 of the following plants, your selection, for $5.00, any 50 for $2.50, any 20 for $1.00.

Fancy giant-flowered Chrysanthemums, 36 kinds, all hues. Fancy giant Carnation plants, Geraniums in all colors, Heliotropes, Marguerite Daisies, Salvias, Coleus, all hues, Stocks, Phlox, Ageratum, Schizanthus, Dusty Miller, Golden Feather, Double Petunias, Single fringed and ruffled Petunias, Lobelias, Verbenas, Vincas, Snapdragon, Cannas, Alternantheras, German Ivies, Ice Pinks, Double Red and Yellow Nasturtiums, Chinese and other Primroses, Acalyphas, Begonias, Fuchsias, Abutilons, and any bedding plant not here listed you can name.

A special price of $40.00 per any 1,000 plants, your selection. This is the chance for large places to get their summer flower beds at wholesale.

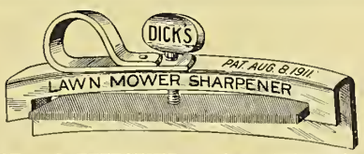
Also specially grown vegetable plants: Early Cabbage, Copenhagen Market, $1.00 per 100. Early Snowball Cauliflower, $1.50 per 100. Pot-grown Tomato Plants, varieties, Earliana, Early Stone, Early Acme, Bonnie Best, Ponderosa, June Pink, 50 for $1.00. Pot-grown Sweet Pepper and Egg Plants, 50 for $1.00. Golden Self-Blanching Celery Plants, $1.50 per 100.

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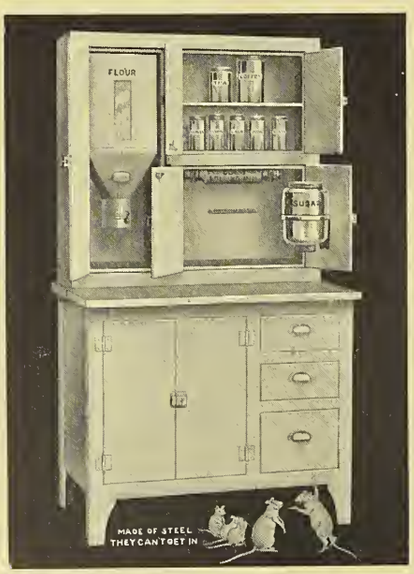


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A lady whom I know writes, "We visited the Blanks and had a charming visit from the time we entered the old shaded driveway and saw the low rambling cottage with its French doors, standing hospitably open. We were given a perfect guest's room, cheerful and full of sweet, fresh air with a restful breeze coming in, for it was a good-sized corner room, thanks to the loving thoughtfulness of our hostess. There was a couch placed with the head toward the light, so one could read in comfort, and nearby were some recent books that I wanted to read. The fireplace was silently inviting us to be comfortable, and the kindling wood was provided and ready to light, with more in a quaint wood-box. There was a writing table complete with pens, ink, paper and stamps, and a little work basket with no necessity omitted. The dressing table was covered with spotless linen and complete toilet set with a box of pins and a whisk broom.

"The twin beds looked so fresh and comfortable that I was sure we could tire ourselves out and our rest in such a room and beds would be refreshing. Between the beds was a stand with a pitcher and glasses, candle and matches. In the closet were two bathrobes and slippers, and on the shelf extra bed covering. Finally I found connected to the room a bathroom, perfectly fitted with everything for our own use. With such provisions for our comfort, we felt like welcome guests."

The above shows one guest's appreciation; perhaps this is unusual, but the hostess should provide her guests with accommodations that leave them some freedom and independent from the movements of the host and family. The moment you realize you are inconveniencing someone, it makes a sensitive guest uncomfortable. The proper provisions for the guest are expensive at the start, because they comprise chiefly adequate bathroom arrangements. For a large family, the owner should have his own bath, and a general bath for the other members of the family; an additional bathroom should be provided for each two guest rooms. If placed between them, it can be entered from either of the chambers. If the guest's bath is not provided then each room should have a lavatory and the general bath should be nearby. The windows in the chambers should be at least three feet wide, and there should be two if it is not a corner room.

Wide projecting eaves keep the rain out of the chamber windows, and wide cornices and heavy overhangs protect the piazza and cast deep shadows.

The sleeping porch is a good thing under certain climatic conditions and where one

(*Continued on page* 524)



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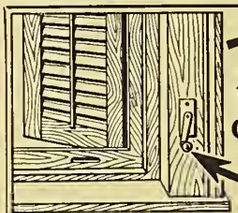
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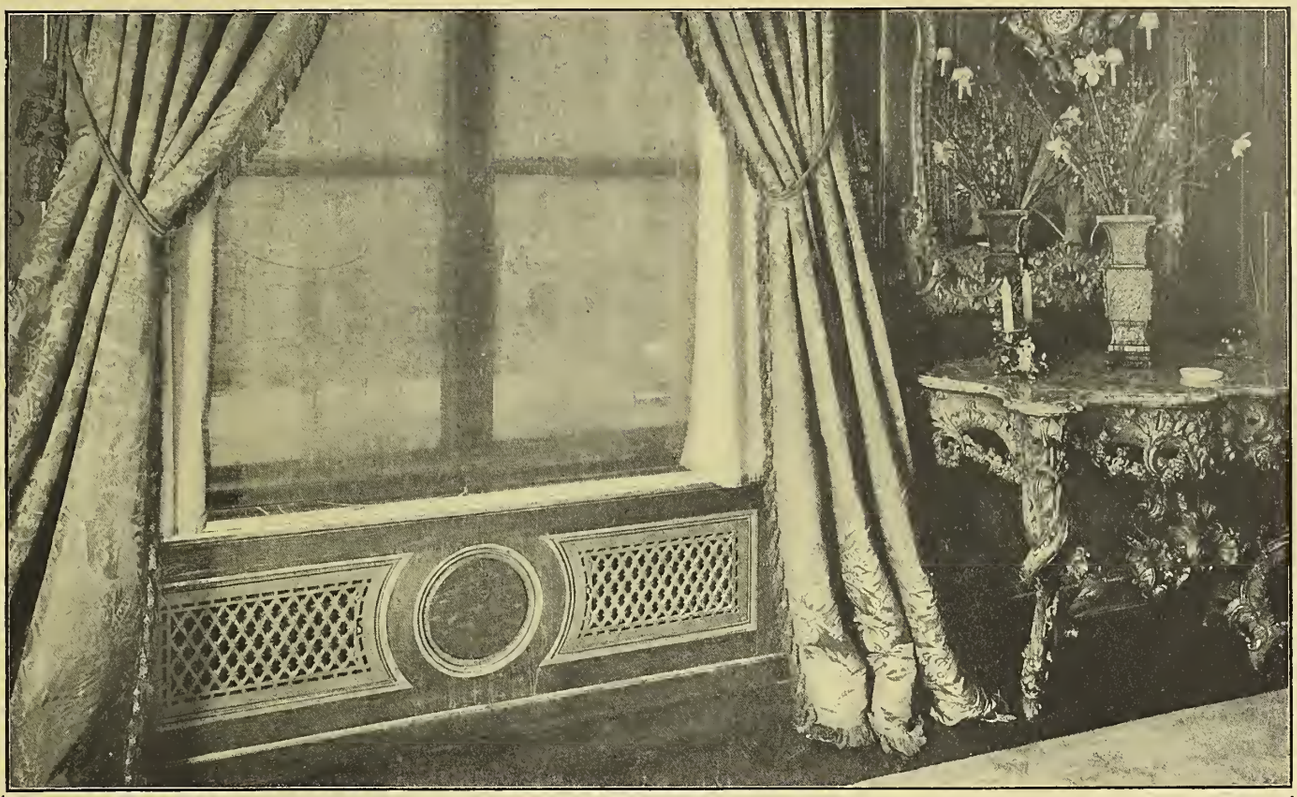
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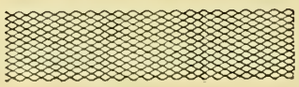
was used in this house at Los Angeles, California



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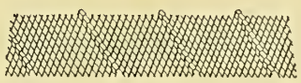


is a flat sheet of metal fabric with a web-like mesh that completely imbeds itself in the plaster. This form of construction produces a reinforced concrete-like wall. The plaster simply *can't* come off.

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Write for "How to Make a Lawn"—mention your dealer's name

THE KALAKA CO., 1102 W. 35th Street, Chicago

(*Continued from page* 522)

is accustomed to sleeping out of doors or intends to do it regularly. At other times I have seen three or four cots set upon it for boys when crowded for chamber space.

The cellar may be put to many uses, if on a slope a portion of the cellar will be out of the ground, well lighted, and so it can be entered from the level—there is a good plan for a shower and dressing-room for the seashore cottage, but each guest must be provided with a bathrobe. In the country house I have seen a swimming pool built in the cellar and extended part way under the piazza and lighted by glass set in the floor. If the cellar or piazza is high at one end it can be made to answer for a garage; this is practical as I have done it.

While I do not advise built-in furniture or features in the formal house when some particular style is being carried out, there are places in the summer cottage where its use is permissible. Probably built-in shelves for books, with drawers below, are the most practical; another good thing is a closet with deep, shallow trays for doilies or bars to hang them over; serving trays should be racked.

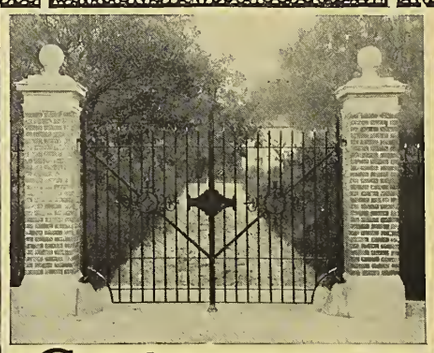
Plan a place for everything that requires being put away. If you like built-in seats, see that they are long and wide enough to be useful, and use the inside for boots, shoes or firewood. The built-in desk makes a handy place for limited writing or a place for house bills, stationery, etc. Instead of providing a place to nest away pots and pans I should provide near the cook stove a series of hooks to hang them on and keep them clean and polished ready for instant use. The icebox should be built-in. There is no doubt that built-in furniture eliminates the heavy movable pieces, saves floor space and prevents dust from collecting in back and underneath. Chests of drawers can be built under the eaves and many little nooks turned into cupboards. Wardrobes are more economical than closets, and are very attractive with their paneled doors.

The photographs show buildings that exemplify the ideas expressed here about structure. The plans on page 457 illustrate various ways of obtaining the desirable room arrangements suggested.

How to Make the Garden Yield With Little Cost

USING the prepared inorganic fertilizers alone will not make the garden plot independently productive; that is, you will have to keep right on using them over and over each year to get results. They are expensive, too, and this kind of treatment is not the best for your soil—you may find that you have to increase the quantity each season. But to have a garden that is really more fertile each year, that can be done only by following Nature's way, by getting some living matter turned into the soil where it will ferment and feed the bacteria that should be there.

(*Continued on page* 526)



Gateways

FOR a moderate expenditure you can have one of our permanent Wrought Iron Gateways like this, giving to your grounds an air of distinction and exclusiveness.

Prices and full description of this and other gateways, fences or tennis enclosures on request.

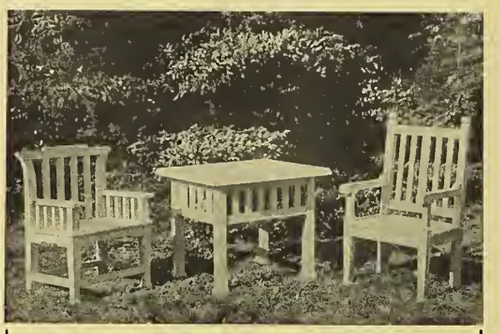
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Asks for
A Square Deal

HE lives in New York's stuffy tenement district. the most congested spot in America.

In his sultry three-room home there is scarcely space to eat and sleep. His playground is the blistering pavement of the ill-smelling streets, hemmed in by scorching brick walls.

No trees, no grass, not even a whiff of fresh air,—in the only world Tommy knows. Ash cans are his background, and the rattle and roar of traffic his environment.

Tommy's widowed mother is broken with worry; his sisters and brothers are as pallid and frail as he. The winter struggle has sapped their vitality. They are starving for air.

No medicine will help Tommy. What he, his mother and the other children need are: a chance to breathe something pure and fresh,—a taste of sunshine and outdoor freedom,—an outing in the country or at the seashore.

But between Tommy and his needs stands poverty, the result of misfortune. He must suffer just as if it were all his fault.

And that is why Tommy appeals for a square deal. Nor does he wish you to forget his mother, or his "pals" and their mothers,—all in the same plight.

This Association every summer sends thousands of "Tenement Tommies", mothers and babies to the country and to Sea Breeze, its fresh air home at Coney Island. A dollar bill, a five dollar check, or any amount you care to contribute, will help us to answer Tommy's appeal.

Send contributions to Robert Shaw Minturn, Treasurer, Room 204, 105 East 22nd Street, New York City.

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Illustrated. $2.00 *net; postage* 10 *cents.*

McBRIDE, NAST & CO., Publishers **Union Square, New York City**

(*Continued from page* 524)

The work that is done by a growing crop is really very wonderful when we stop to consider it. The roots, if they are extensive, are reaching into the lower strata of soil and bringing up fertility to the layers above. With the leguminous plants, the peas, beans and clovers, some of the nitrogen from the air is being stored in the roots, all for the plants' use later on. Now, if the life of these plants is suddenly cut short, the decay of their parts will yield a quantity of these rich plant foods which some of our garden crops can use. By plowing such crops into the soil a quantity of green manure is obtained with less labor and expense than where one must buy and haul stable manure or other fertilizers.

Now, in order to bring about the right condition for next year's garden it is necessary to begin at once, in the summer, by planting each vacant place in the garden with clover or some other cover crop. Of course, the whole garden cannot be given over to this recuperative work so early, but there are the rows where the early cabbage, turnips, spinach, lettuce and early potatoes grew, the radish plot and the vacancy left by early beets and peas—all these spaces become available before July is over. Even the asparagus is helped by planting a cover crop between its rows. There is little work about it. Have the soil free of weeds, of course, then loosen it with a steel-toothed rake, scatter the seed, rake over it and firm the soil.

The clovers, cow peas, beans and vetches are the most valuable green manuring crops that can be planted before September first. After that do not try any of the legumes, but use wheat or rye, though they will gather no nitrogen.

Scarlet clover is very satisfactory for this midsummer planting. It is an annual and hardy enough to live over in the vicinity of New York, unless the winter is very severe. It does a lot of good work anyway before winter, so one does not lose if it winter-kills. This can be sown between all the rows of vegetables about August first, and will survive the walking over that vegetable gathering requires.

As soon as the ground can be worked in the spring the clover should be plowed under and some burned shell or stone lime scattered over the ground to sweeten it if it is heavy and sour.

Where there is room and time, white lupins will gather the heaviest stores of nitrogen for the garden soil, but this crop requires four months for growth, and should be plowed under when in bloom. If there is a plot of ground in prospect for a garden it can be planted with white lupins in July, plowing them under in October and sowing again with rye. This will give an abundance of fertility and humus the next spring.

For very light, sandy plots, kidney vetch or sand clover will grow more readily. Spurry sown in July is good on soils like this, as it grows readily and gathers nitrogen, rooting deep enough to distribute fertility.

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Taking the automobile as a somewhat hackneyed but apt comparison—you would not think of allowing good salesmanship, alone, to sell you a car. You would sell yourself the car first by carefully looking into it, and making sure that it was the car best adapted for your purposes and pocket-book.

Then you would be ready to listen to sales talk. It's equally logical to buy a greenhouse in the same way, because they vary so greatly in method of construction and consequent productiveness, as well as freedom from repair and running costs.

This is conspicuously so with the U-Bar, because no other greenhouse is constructed like it. Some may look like it, but that's the only way they are like it.

If it isn't constructed with the U-Bar, it isn't a U-Bar curved eave house. All we ask you to do is to carefully compare our construction with other constructions.

After you have done this, grant us the opportunity to give you further facts. If you should then conclude not to give us the order, you will at least feel satisfied that, as a matter of protection, you have given the subject the consideration it merits.

It will obviate that most disheartening of things—the jolt of waking up to your mistakes after having spent your money.

Send for our catalog or send for us—or both.

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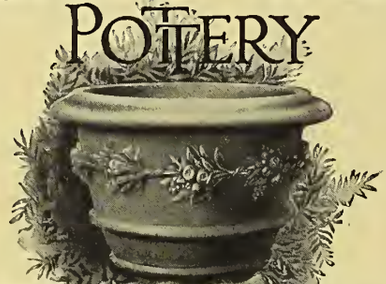
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Placed on the sideboard, library or porch table the Thermos Carafe provides an ever ready supply of clean drinking water, icy cold, for the entire household.

Many hostesses use the Carafe as a novel and convenient method of serving hot or cold liquid refreshments when entertaining, as the refreshments can be prepared hours in advance and kept piping hot or ice cold in Thermos until ready to serve.

In the nursery, Thermos saves work, worry and even life by keeping the baby's milk cold, clean, germ and fly proof.

Invalids and aged people derive great comfort from Thermos as in it hot broth, coffee, cocoa or iced water, milk, champagne, or other stimulants or refreshment can be kept within reaching distance where they can help themselves as needed.

Away from home, when motoring, sailing, driving, fishing, hunting, on picnics or outings of any character, Thermos gives pure, clean drinks, icy-cold or steaming hot wherever you may be. It doubles the pleasure of the open air lunch by allowing you to have hot coffee, cocoa or soup or an iced beverage when far from fire or ice.

Thermos keeps liquids ice-cold for 3 days without ice or steaming hot for 24 hours without fire.

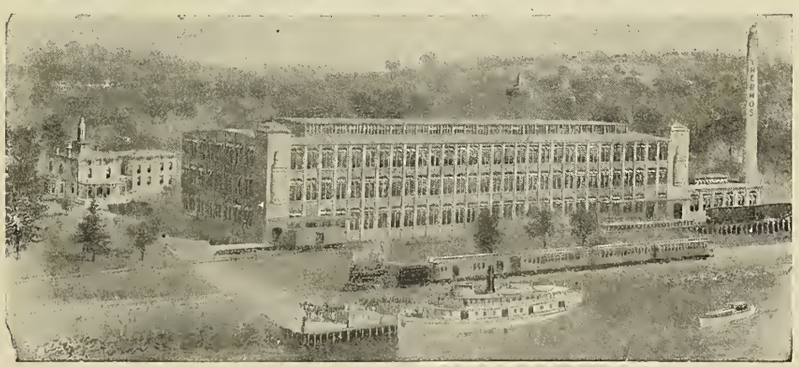


Full nickel corrugated $3.50
Thermos Carafes $2.50 up
Thermos Coffee Pots aod
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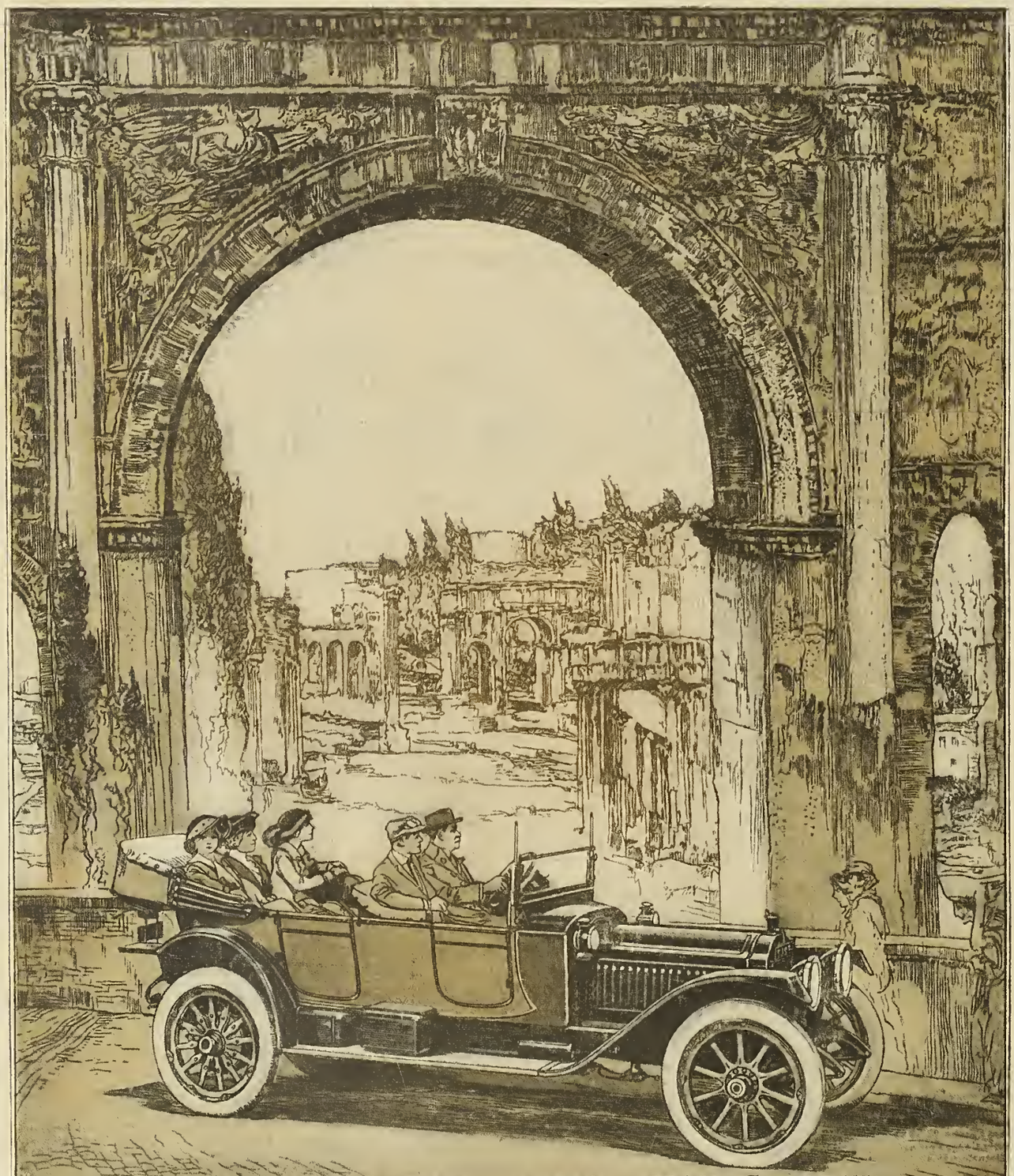


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PACKARD



ASK THE MAN WHO OWNS ONE

Packard "38" Phaeton, Rome. *From the etching by E. Horter.*

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